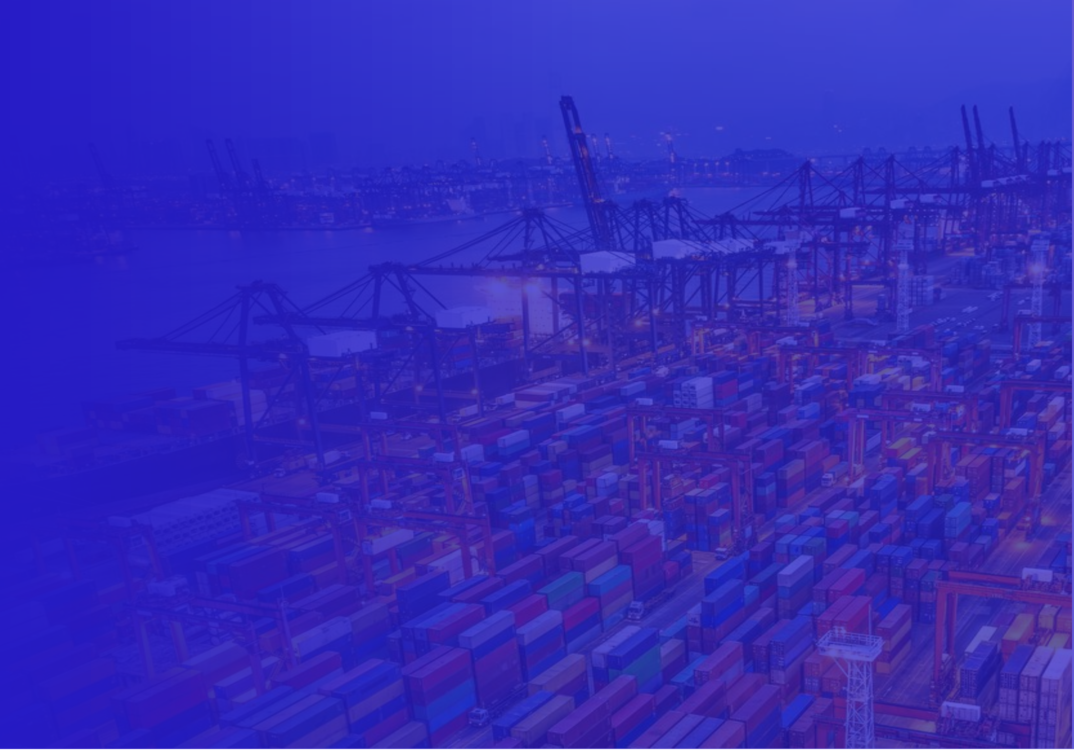
Industry Supply Chains Summary Report



A summary of select operating metrics for 19 industries, comprising 3341 companies and $38.9T in revenue.

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worldlocity

Version

VERSION	DATE	NOTES
2021.1.1	04.01.21	Initial version, dated 04.01.21
2021.2.1	06.25.21	Updated financial and market cap data for 06.25.21. Removed companies that merged or were taken private.
2021.3.1	11.30.21	Updated financial and market cap data for 11.30.21. Removed companies that merged or were taken private.
2022.1.1	01.01.22	Updated financial and market cap data for 01.01.22. Added companies and removed those that merged or were taken private.
2022.2.1	05.16.22	Updated financial and market cap data for 05.16.22. Added companies and removed those that merged or were taken private.
2022.2.2	10.07.22	Updated financial and market cap data for 10.07.22. Added companies and removed those that merged or were taken private.
2023.1.1	12.01.23	Updated financial and market cap data for 12.01.23. Added companies and removed those that merged or were taken private.
2025.1.1	12.02.25	Updated financial and market cap data for 12.02.25. Added companies and removed those that merged or were taken private.

Versioning convention: This document is versioned as follows: **YYYY.N.n**, where **YYYY** is the year, **N** is the major release number, and **n** is the minor release number. A major release includes one or more of the following: the number of companies changes; reports and analyses change; financial and market cap information are updated, and a new date is attached to the report. A minor fixes errors, including data errors, formatting errors, and inconsistencies.

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Introduction

- This report is intended to provide information and insights into the operating characteristics of industries that make, move, store, and sell things (i.e., are part of the global goods-producing economy and associated global supply chains).
- The report includes 19 industries, comprising 3000+ companies from across the globe. In aggregate these companies represent more than $38 trillion in revenue. The report profiles the following metrics for each of the industries: gross margin, operating margin, EBITDA, SG&A, inventory turns, physical asset intensity, CAPEX, ROIC, and market cap multiple. It provides this information for the latest financial results on a trailing twelve months basis (as of the date on the cover of this report), and for the past ten years.
- The report provides aggregate information for each industry, which is useful for understanding industry operating and structural characteristics.
- The data set is large enough that the analysis and insights here should be a proxy for the operating characteristics of individual industries and by extension the overall goods-producing economy.
- All market and financial information is that which is available as of the date on the cover of this report.
- See "What type of supply chain strategy drives market cap leadership?" for insights based on earlier versions of this report.

Introduction

What is meant by aggregate information?

- This reports aggregates data from income statements, balance sheets, cash flow statements and other information sources for all companies in each industry. It also aggregates data across all industries. It uses this data to gain an understanding of true industry dynamics, not distorted by averages across individual companies. An example of this for gross margin and inventory turns is shown below.

METRIC[1]	APPROACH	GOOD FOR?
INDUSTRY GROSS MARGIN or ALL INDUSTRIES GROSS MARGIN	1. Aggregate all revenue for all companies. 2. Aggregate all COGS for all companies. 3. Subtract Aggregate COGS from Aggregate Revenue to derive Aggregate Gross Profit. 4. Divide Gross Aggregate Gross Profit by Aggregate Revenue to derive Industry Gross Margin.	Overall industry structure and operations and overall supply chain operations. What is the size of the overall revenue and profit pools and who is winning and who is losing?
INDUSTRY INVENTORY TURNS or ALL INDUSTRIES INVENTORY TURNS	1. Aggregate all COGS for all companies. 2. Aggregate all Inventories for all companies. 3. Divide Aggregate COGS by Aggregate Inventories to derive Industry Inventory Turns.	

Notes:
1. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Introduction
Industries and aggregate data

This data set is a reasonable proxy for global goods-producing industries and thus, global supply chains.

INDUSTRY	#	REVENUE ($M)	COGS ($M)	GROSS PROFIT ($M)	INVENTORIES ($M)	INV TURNS	GDP ($M)
Aerospace and Defense	70	$826,549	$684,050	$142,499	$276,308	2.5	$484,524
Automotive	152	$3,315,450	$2,762,818	$552,632	$472,863	5.8	$1,934,041
Chemicals	191	$1,091,058	$823,839	$267,219	$199,916	4.1	$679,138
Construction	152	$1,315,003	$1,127,300	$187,703	$273,512	3.8	$751,353
Consumer Goods	211	$1,219,674	$605,367	$614,307	$229,678	2.6	$916,990
Energy / Utilities	203	$1,882,197	$1,474,608	$407,588	$111,898	12.9	$1,144,893
Food and Beverage	262	$2,031,721	$1,359,784	$671,936	$306,337	4.4	$1,351,828
Hitech Electronics	208	$2,304,798	$1,628,377	$676,421	$305,654	5.3	$1,490,610
Hitech Semiconductors	103	$870,282	$414,956	$455,326	$148,776	2.8	$662,804
Industrials	295	$3,739,154	$2,785,378	$953,776	$651,743	4.3	$2,346,465
Materials / Mining	256	$2,057,712	$1,640,188	$417,524	$359,761	4.5	$1,237,618
Medical Equipment	137	$677,847	$343,473	$334,374	$107,950	3.0	$506,111
Oil and Gas	223	$4,845,479	$4,043,393	$802,087	$358,568	11.1	$2,823,783
Pharmaceuticals	145	$1,305,910	$441,132	$864,778	$223,207	2.0	$1,085,344
Restaurants	75	$313,605	$226,378	$87,226	$7,856	28.1	$200,416
Retail	231	$5,725,434	$4,115,838	$1,609,596	$527,567	7.5	$3,667,515
Telecommunications	116	$1,579,584	$1,015,253	$564,332	$32,026	28.0	$1,071,958
Transportation	213	$1,832,607	$1,491,711	$340,896	$69,312	18.3	$1,086,751
Wholesale Distribution	98	$1,976,116	$1,786,733	$189,383	$185,645	9.6	$1,082,750
ALL INDUSTRIES	**3341**	**$38,910,180**	**$28,770,579**	**$10,139,602**	**$4,848,576**	**5.8**	**$24,524,891**

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. # = the number of companies included in each industry.
3. GDP is a rough estimate. It is derived as a simple equation: gross profit plus one-half cost of goods sold. The reasoning is that gross profit represents the value-add pricing power of a company, and that some percentage of COGS includes transformation activity. US Bureau of Economic Analysis shows a GDP to gross output ratio of approximately 0.57 for the overall economy. Future versions of this report may attempt to reconcile these numbers and produce a better percentage for the value add that is included in COGS.
4. “All Industries” represents aggregate values across all industries.
5. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

NOTES & INSIGHTS

- The data set is made up of >3000 companies from across the globe in 19 industries. Companies are limited to those that make, move, store, or sell physical products. The revenue cutoff point in each industry is somewhere between $200M and $2.0B.
- All data in this report are aggregated for each industry. Aggregate data gives a better view of the operational characteristics of an industry than an average of percentages for each company.
- Inventory turns shown here are aggregate inventory turns calculated as aggregate COGS divided by aggregate inventory within each industry and for all industries (only for those companies that carry inventory; a small number of companies in the Transportation industry are service companies and carry no inventory).
- Aggregate inventory turns for all companies are around six. This likely represents the inventory turns for the overall global economy

Introduction

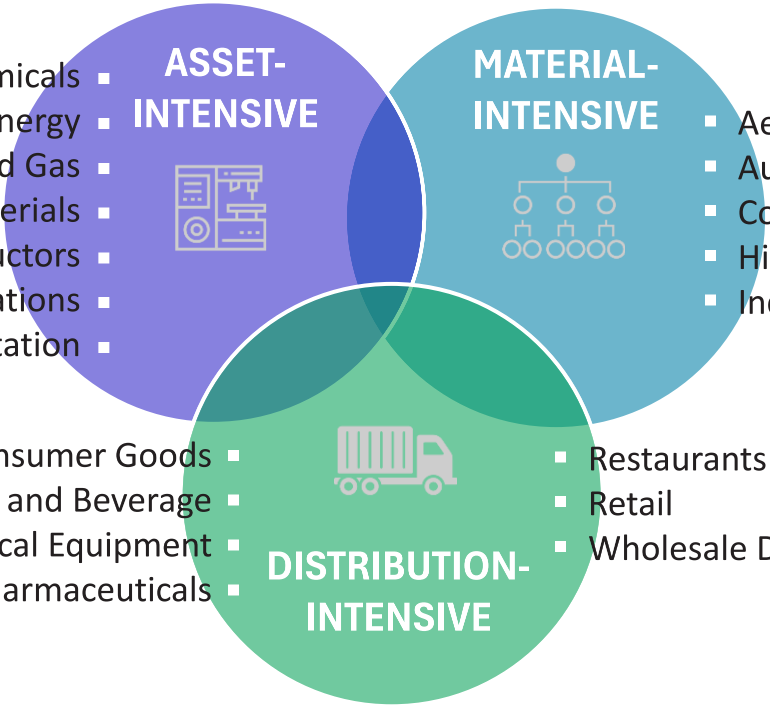
Key metrics – overall across all industries

1 GROSS PROFIT MARGIN	Aggregate gross margin stands at 26.0%, which is close to its ten-year average. Gross margin varies by industry, from a low of 9.6% to a high of 66.2%.
2 OPERATING PROFIT MARGIN	Aggregate operating margin stands at 10.8% which is slightly above the ten-year average. The early 2020s saw higher operating margins through pricing power and companies able to more than offset the effects of inflation. However, the past couple of year has seen operating margins move back towards historical averages.
3 NET PROFIT MARGIN	Aggregate net margin stands at 7.2%, which is significantly above levels from ten years ago. This reflects increased pricing power and companies able to more than offset the effects of inflation. However, the past year has seen net margins decline, which may reflect a movement back to historical averages.
4 INVENTORY TURNS	Aggregate inventory turns stand at 5.8, which is a ten-year low. This continues a 15-year march downward as lead times have elongated, companies have carried more inventory to offset risk, and companies are also doing a better job of strategically managing their inventories for competitive advantage.
5 ASSET INTENSITY	Asset intensity is defined as fixed assets (net of depreciation) as a percentage of revenue. This measure stands at 51.6% which is comparable to levels seen early in the 2010s. While there is a narrative about digital and software “eating the world,” the asset intensity across all supply chain industries has remained unchanged.
6 RETURN ON INVESTMENT	Aggregate return on invested capital (ROIC) stands at 8.8%, which is comparable to the average for the past ten years.
7 MARKET CAP MULTIPLE	Aggregate market cap to revenue stands at 1.8 which is significantly above the ten-year average The overall price / earnings multiple across all industries stands at 25.1, which is also above the ten-year average (when not including the pandemic year of 2020).

Introduction
Industry primary characteristics

Each of the 19 industries exhibits primary characteristics that anchor a lot of the focus of supply chain management. While this segmentation has limitations, it is still a good starting point for thinking about supply chain characteristics of industries.

PRIMARY INTENSITIES



- Chemicals
- Energy
- Oil and Gas
- Materials
- Semiconductors
- Telecommunications
- Transportation

- Aerospace and Defense
- Automotive
- Construction
- Hitech Electronics
- Industrials

- Consumer Goods
- Food and Beverage
- Medical Equipment
- Pharmaceuticals

- Restaurants
- Retail
- Wholesale Distribution

SECONDARY INTENSITIES

- Labor intensity
- Process-intensity
- Intellectual property-intensity
- Direct sales intensity
- Promotions intensity
- Perishability and expiry intensity
- Regulatory intensity

Notes:
1. The diagram shows that there is overlap between the different types of supply chains. For example, the primary focus of automotive supply chains is material coordination and material efficiency (material intensity), but it also has elements of asset intensity and distribution intensity. Likewise, many industries exhibit one or more elements of the secondary intensities.

Aggregate View

Supply chain view of industries and aggregate information across all industries.

Industry Supply Chains

Data set – a proxy for the global supply chain

INPUTS

Sector	Number of Companies	Aggregate Revenue ($M)
MATERIALS / MINING	256	$2,057,712
CHEMICALS	191	$1,091,058
ENERGY / UTILITIES	203	$1,882,197
OIL & GAS	223	$4,845,479
TELCO	116	$1,579,584

GOODS PRODUCING

Sector	Number of Companies	Aggregate Revenue ($M)
AEROSPACE & DEFENSE	70	$826,549
AUTOMOTIVE	152	$3,315,450
INDUSTRIALS	295	$3,739,154
CONSUMER GOODS	211	$1,219,674
FOOD & BEVERAGE	262	$2,031,721
HITECH SEMICONDUCTOR	103	$870,282
HITECH ELECTRONICS	208	$2,304,798
MEDICAL EQUIPMENT	137	$677,847
PHARMACEUTICALS	145	$1,305,910
CONSTRUCTION	152	$1,315,003

DISTRIBUTION

Sector	Number of Companies	Aggregate Revenue ($M)
WHOLESALE	98	$1,976,116
TRANSPORTATION	213	$1,832,607

RETAIL

Sector	Number of Companies	Aggregate Revenue ($M)
RETAIL	231	$5,725,434
RESTAURANTS	75	$313,605

TOTAL

Sector	Number of Companies	Aggregate Revenue ($M)
TOTAL	3341	$38,910,180

LEGEND

= NUMBER OF COMPANIES

= AGGREGATE REVENUE ($M)

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report
2. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains

A summary of four key metrics for each industry (TTM)

INPUTS

Industry	Gross Margin	Operating Margin	Inventory Turns	ROIC
MATERIALS / MINING	20.3%	12.5%	4.5	8.6%
CHEMICALS	24.5%	9.1%	4.1	6.1%
ENERGY / UTILITIES	21.7%	15.4%	12.9	5.3%
OIL & GAS	16.6%	10.8%	11.1	8.1%
TELCO	35.7%	17.1%	28.0	7.2%

GOODS PRODUCING

Industry	Gross Margin	Operating Margin	Inventory Turns	ROIC
AEROSPACE & DEFENSE	17.2%	8.1%	2.5	10.1%
AUTOMOTIVE	16.7%	5.4%	5.8	4.9%
INDUSTRIALS	25.4%	10.1%	4.3	7.3%
CONSUMER GOODS	50.4%	14.5%	2.6	14.2%
FOOD & BEVERAGE	33.1%	12.6%	4.4	10.0%
HITECH SEMICONDUCTOR	52.3%	33.0%	2.8	22.4%
HITECH ELECTRONICS	29.3%	12.4%	5.3	16.0%
MEDICAL EQUIPMENT	49.3%	15.5%	3.0	7.9%
PHARMACEUTICALS	66.2%	24.8%	2.0	14.3%
CONSTRUCTION	14.3%	6.9%	3.8	8.2%

DISTRIBUTION

Industry	Gross Margin	Operating Margin	Inventory Turns	ROIC
WHOLESALE	9.6%	2.8%	9.6	11.6%
TRANSPORTATION	18.6%	9.3%	18.3	7.6%

RETAIL

Industry	Gross Margin	Operating Margin	Inventory Turns	ROIC
RETAIL	28.1%	6.3%	7.5	11.3%
RESTAURANTS	27.8%	13.2%	28.1	14.2%

TOTAL

Industry	Gross Margin	Operating Margin	Inventory Turns	ROIC
ALL INDUSTRIES	26.1%	10.8%	5.8	7.8%

LEGEND

- = GROSS MARGIN
- = OPERATING MARGIN
- = INVENTORY TURNS
- = ROIC

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. All numbers are aggregate for each industry, calculated by summing each variable within each industry (not an average of percentages for each company). “All Industries” is the aggregate value for all industries (not the average of the percentages for each industry).
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

A summary of four key metrics for each industry (aggregate for 2014-2024)

INPUTS

MATERIALS / MINING	19.7%	12.2%	4.8	8.7%
CHEMICALS	25.0%	10.5%	4.7	8.9%
ENERGY / UTILITIES	20.1%	12.2%	14.6	4.8%
OIL & GAS	14.4%	8.7%	11.5	7.1%
TELCO	35.1%	15.7%	28.5	7.1%

GOODS PRODUCING

AEROSPACE & DEFENSE	18.9%	8.0%	2.7	9.5%
AUTOMOTIVE	19.0%	6.4%	6.5	6.7%
INDUSTRIALS	24.4%	9.2%	4.7	7.5%
CONSUMER GOODS	48.2%	14.3%	3.0	16.4%
FOOD & BEVERAGE	34.4%	13.5%	4.7	10.4%
HITECH SEMICONDUCTOR	46.5%	23.8%	3.4	16.4%
HITECH ELECTRONICS	28.5%	11.2%	6.7	16.5%
MEDICAL EQUIPMENT	49.4%	15.5%	3.4	8.3%
PHARMACEUTICALS	64.9%	22.8%	2.3	13.4%
CONSTRUCTION	25.0%	10.5%	4.7	8.9%

DISTRIBUTION

WHOLESALE	10.4%	2.9%	9.5	11.1%
TRANSPORTATION	18.0%	8.7%	22.5	7.4%

RETAIL

RETAIL	26.0%	5.5%	7.7	11.1%
RESTAURANTS	29.6%	13.4%	28.4	13.8%

TOTAL

ALL INDUSTRIES	25.0%	10.1%	6.4	7.3%

LEGEND

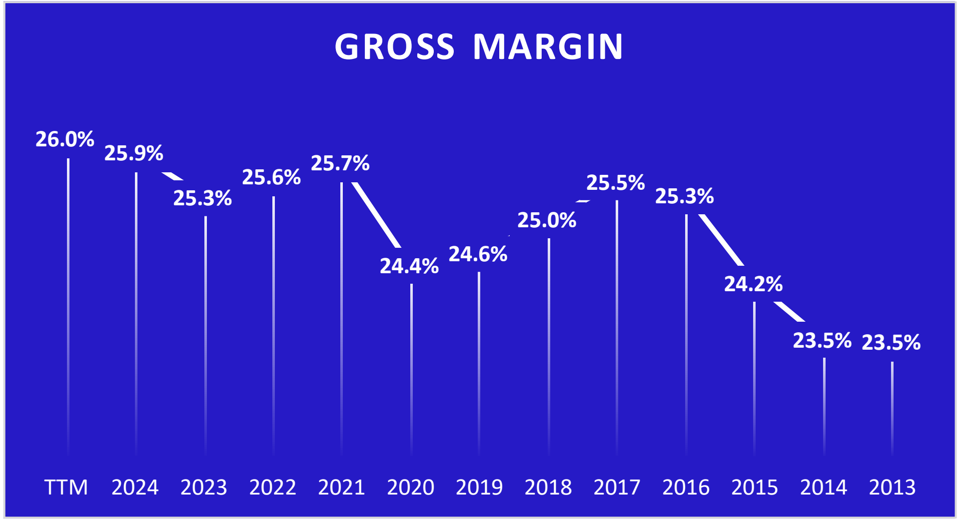
- = GROSS MARGIN
- = OPERATING MARGIN
- = INVENTORY TURNS
- = ROIC

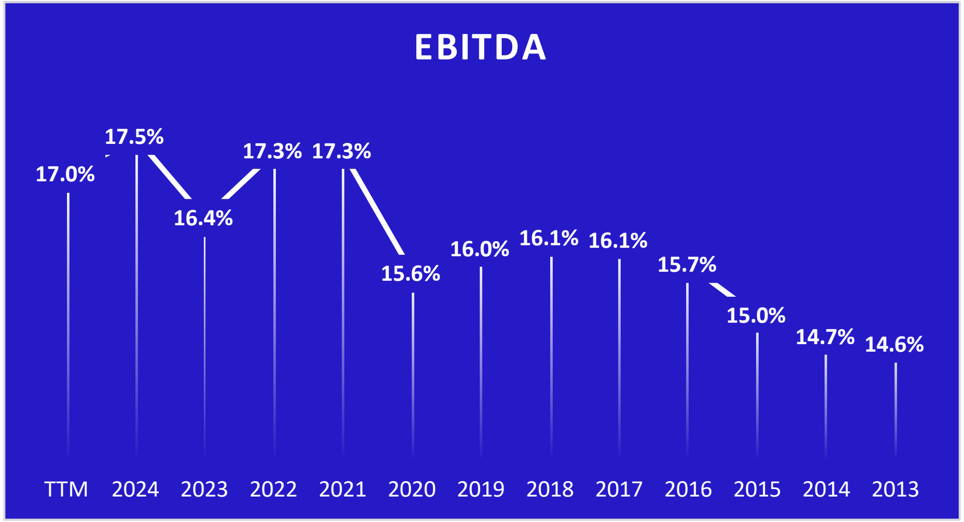
Notes:

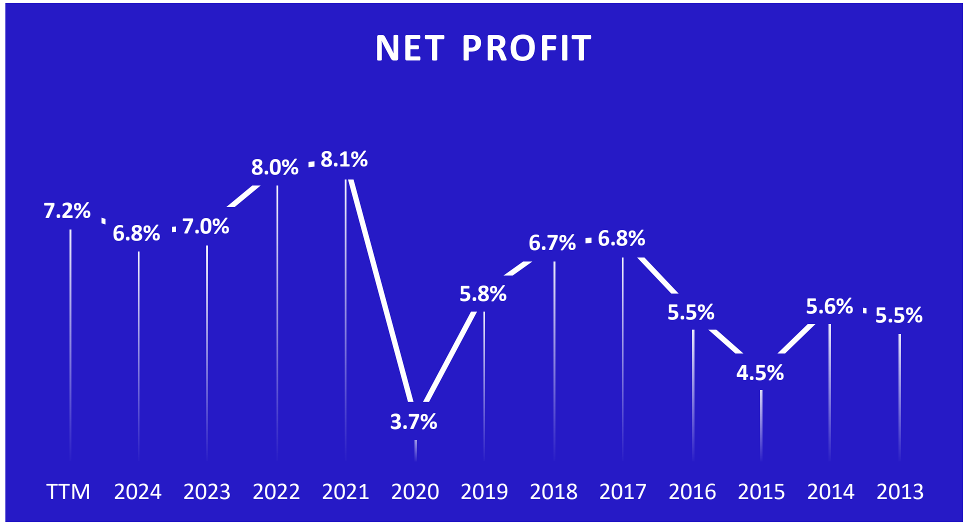
1. All numbers are based on the average of the aggregates for each of the years of 2014 to 2024. Results for 2024 are based on those available as of the date on the cover of this report. "All Industries" numbers are averages of the aggregate for all industries for each year (2014-2024).
2. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains

Global aggregate metrics across 19 industries







NOTES & INSIGHTS

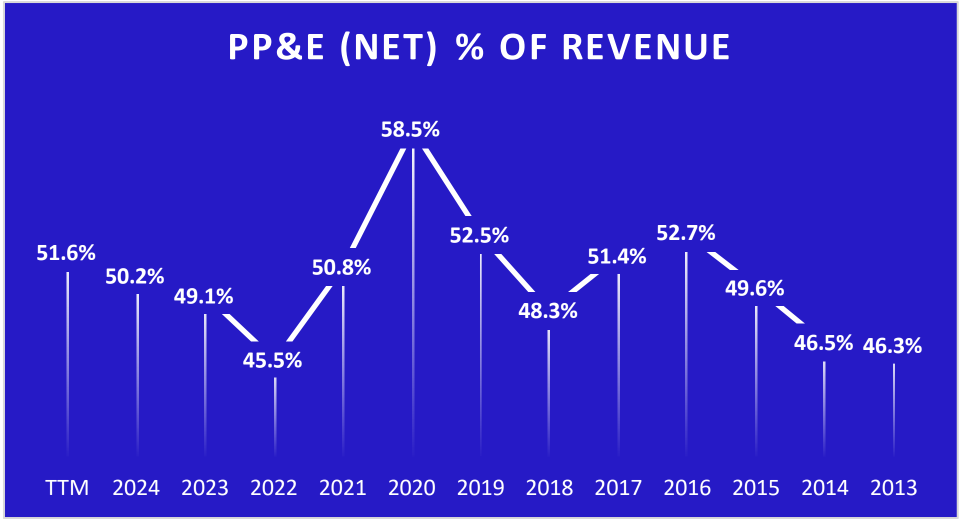
- Aggregate numbers are for all goods-producing, transportation, distribution, and retail industries. These numbers give a general sense of operating characteristics of supply chains and how they change over time.
- Aggregate gross margin and EBITDA have been on a positive trajectory since the beginning of the ten-year period.
- Aggregate operating and net profits have rebounded significantly from their 2020 pandemic lows and are now above their pre-pandemic numbers.

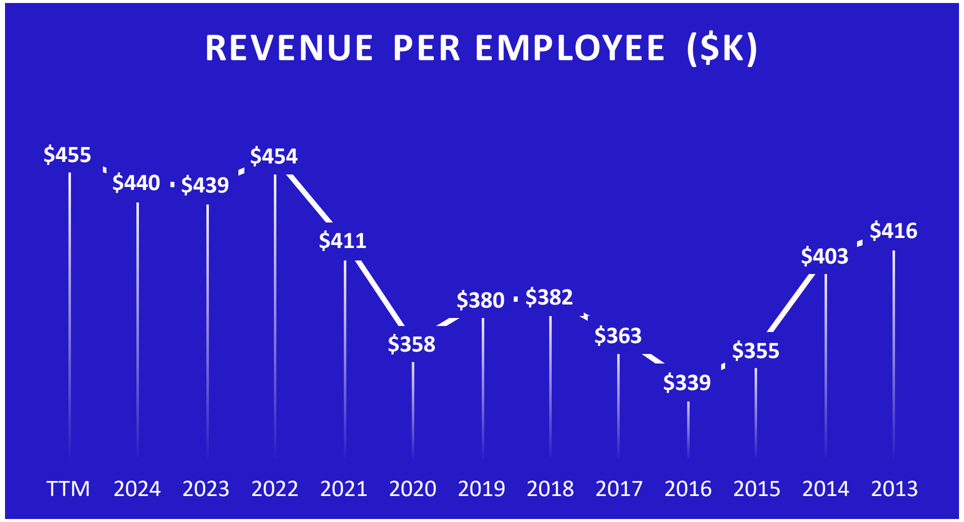
Notes:

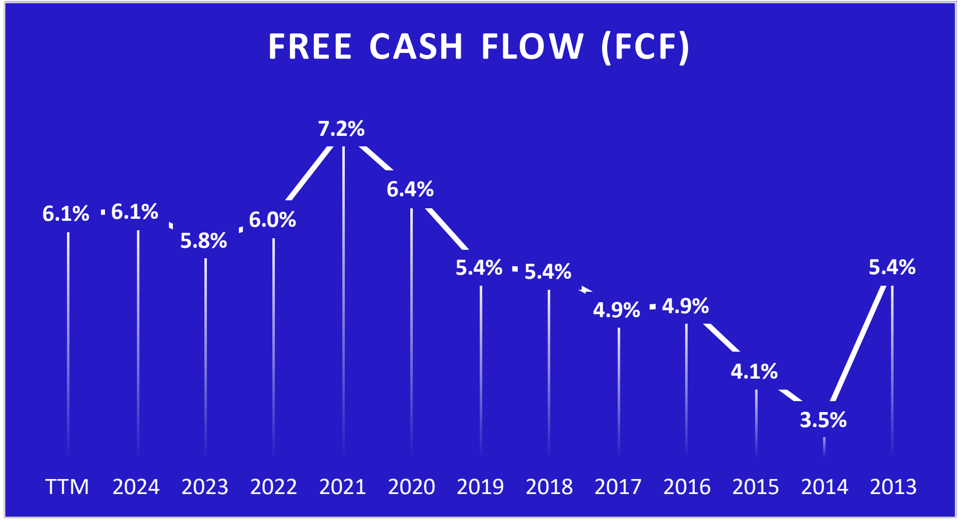
1. TTM = trailing twelve months as of the date on the cover of this report. This typically means the most recently reported four quarters for each company.
2. All numbers are based on aggregate date for all companies across all industries. For example, gross margin is calculated as: (aggregate revenue for all companies in all industries minus aggregate COGS for all companies in all industries) divided by aggregate revenue for all companies in all industries.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix..

Industry Supply Chains

Global aggregate metrics across 19 industries







NOTES & INSIGHTS

- Aggregate numbers are for all goods-producing, transportation, distribution, and retail industries. These numbers give a general sense of operating characteristics of supply chains and how they change over time.
- Inventory turns held steady at about 7 for the first several years of the time horizon and then have dropped significantly since then. This is likely due to lengthened lead times associated with global sourcing, e-Commerce competition, along with product variety, SKU-count and variant increases, and shortened, multiple delivery paths (omni-channel). Some of the drop is also due to accounting rule changes that impacted certain industries in the middle of the decade.
- Fixed assets as a percentage of revenue held steady for the first several years of the decade and then have increased since then. Some of the increase in 2019 was due to accounting rule IFRS 16, which requires companies to report lease assets on their balance sheets. Some of the increase in 2020 is due to the pandemic-driven revenue recession.
- There was a sharp increase in aggregate revenue per employee in 2021-2022. This is largely due to in a significant increase in the oil and gas industry. Oil and gas revenues rose sharply, as the price of oil and other inputs rose sharply. The opposite effect took place between 2014 and 2015, as oil prices declined significantly. It's also important to note that revenue values are in "current," numbers, not adjusted for price inflation.

Notes:

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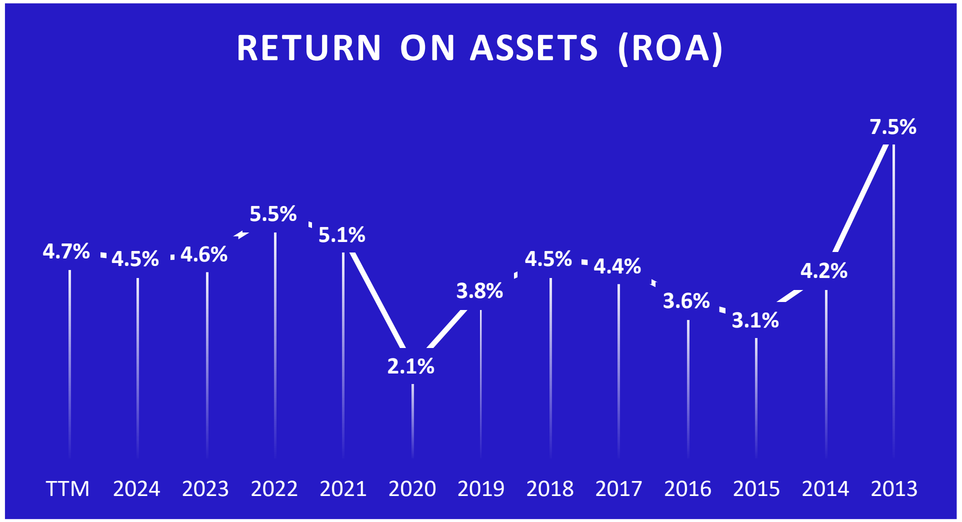
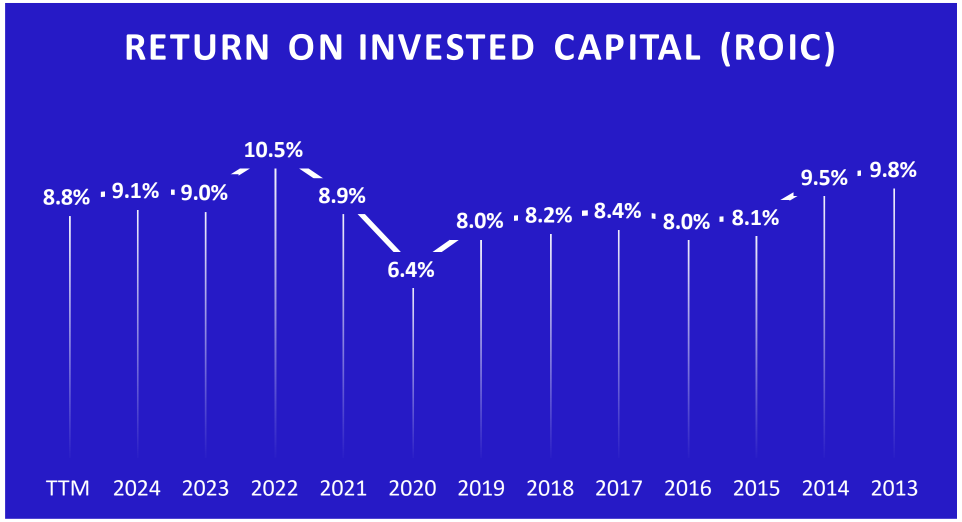
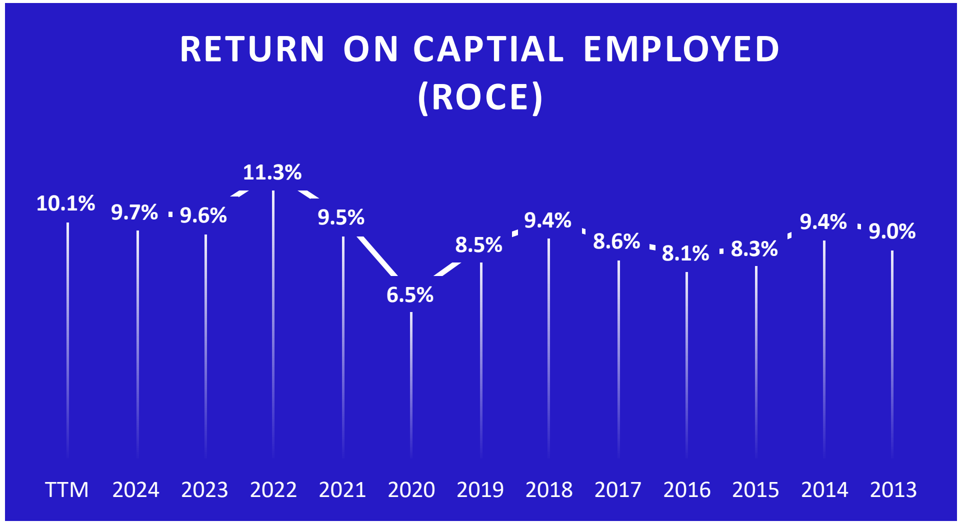
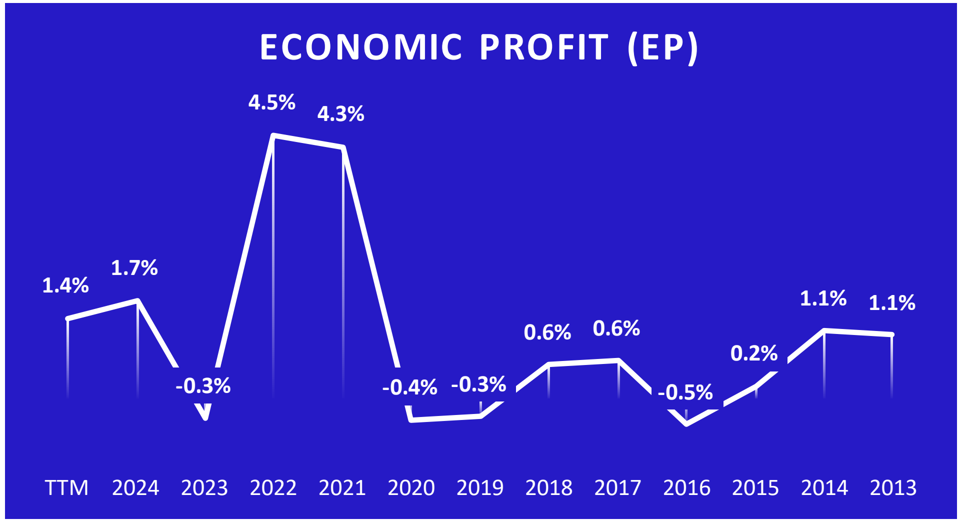
Industry Supply Chains

Global aggregate metrics across 19 industries









NOTES & INSIGHTS

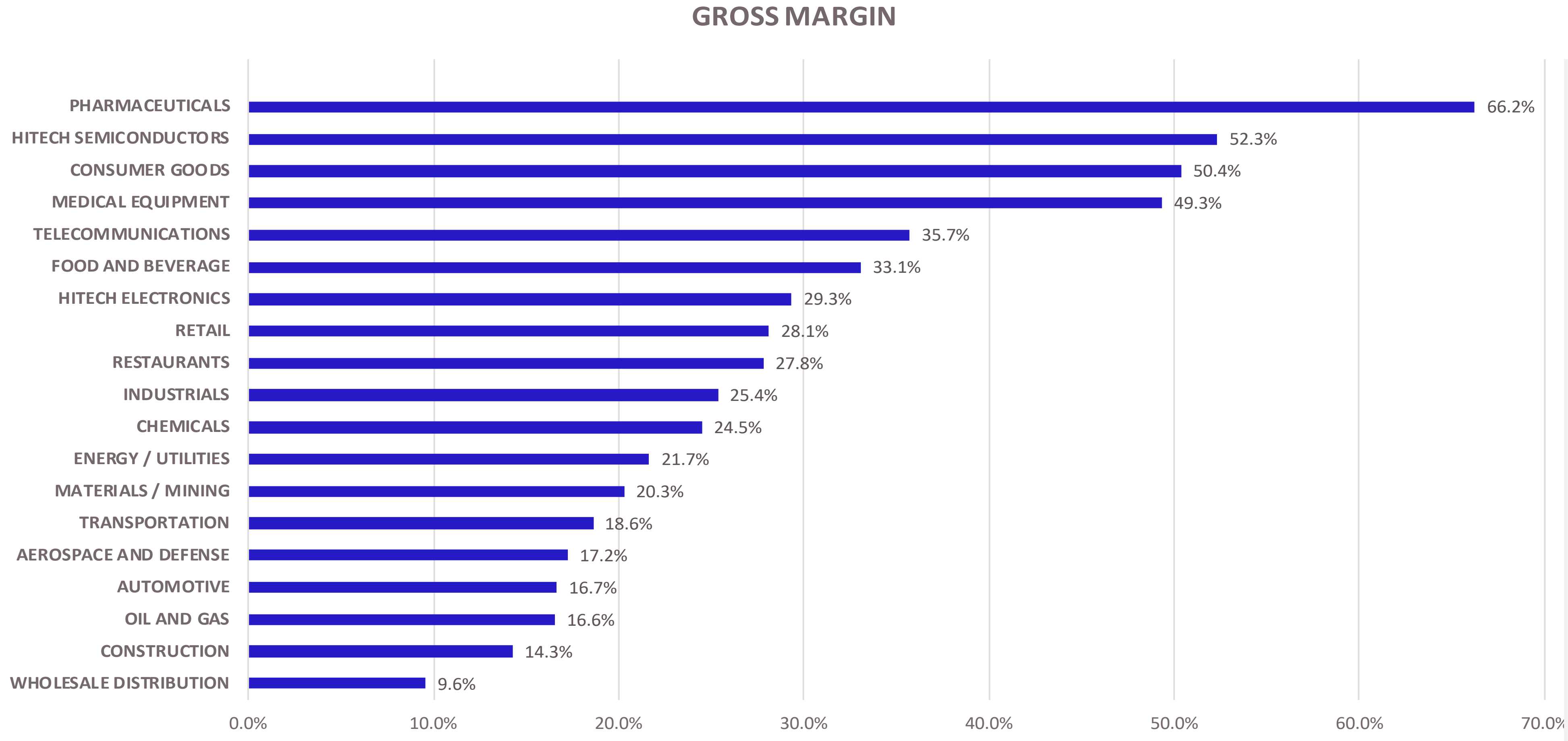
- Aggregate numbers are for all goods-producing, transportation, distribution, and retail industries. These numbers give a general sense of operating characteristics of supply chains and how they change over time.
- This page shows the aggregate values of some of the more common return on investment metrics.
- ROA, ROIC, and ROCE held relatively steady across the decade with notable dips during the pandemic.
- Economic Profit has bounced around zero most of the decade, except for a couple of years during the pandemic. This shows a temporary rapid profit expansion without a similar expansion in cost of capital.

Notes:
1. TTM = trailing twelve months as of the date on the cover of this report. This typically means the most recently reported four quarters for each company.
2. All numbers are based on aggregate date for all companies across all industries. For example, inventory turns are calculated as: aggregate COGS for all companies in all industries divided by aggregate inventory for all companies in all industries.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Comparisons

Comparison of key financial and operational metrics between industries.

Industry Supply Chains
Gross margin

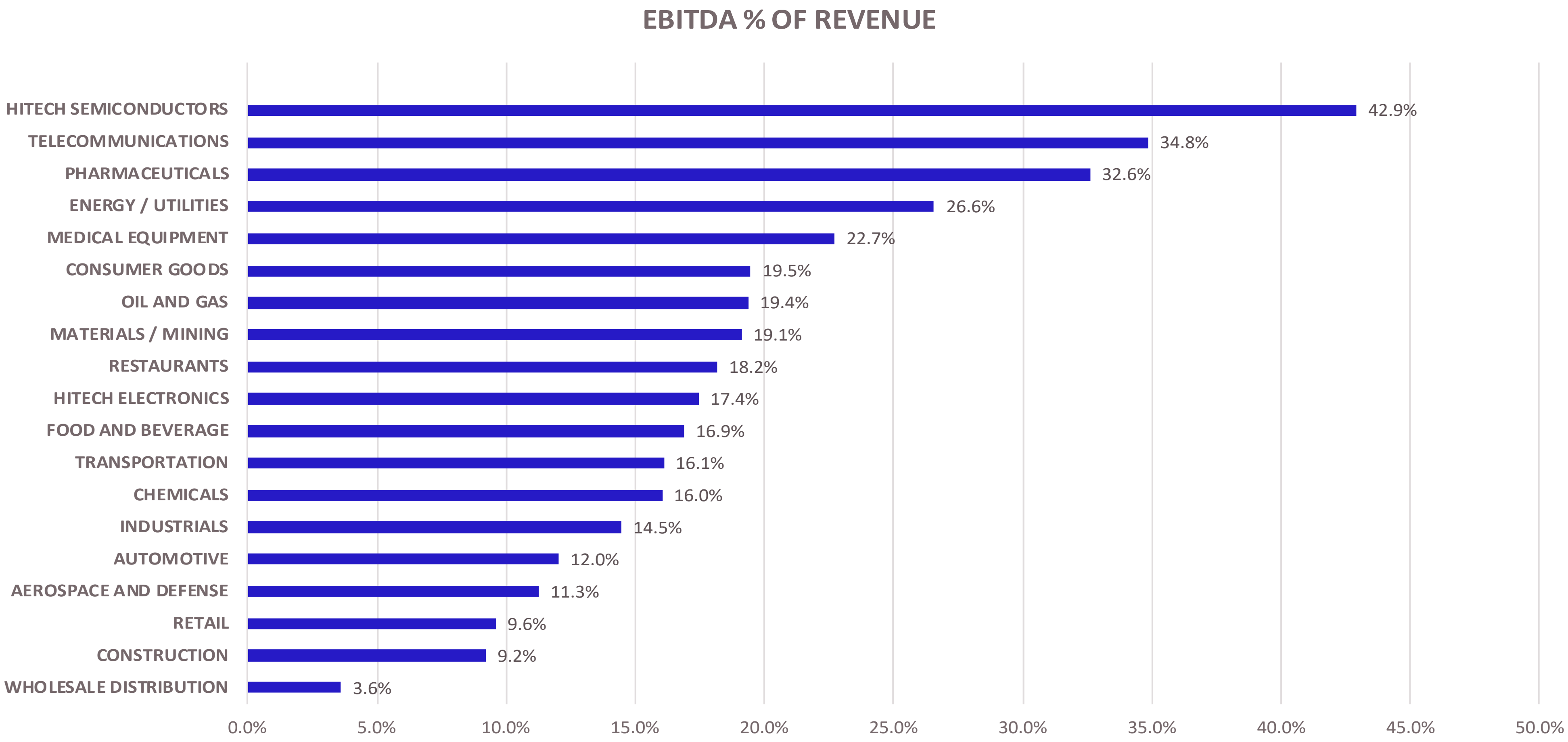


NOTES & INSIGHTS

- High gross margin industries are generally characterized by high IP content and/or low relative material content and/or low conversion costs.
- Low gross margin industries typically have high procurement costs and/or significant bills of materials, or high price fluctuations (e.g., oil and gas), which can lead to peaks and valleys in gross margin. They typically also have higher conversion costs.
- Some industries do not specifically break out COGS on their income statement. In these cases, COGS is a derived from other costs. COGS here is defined as all costs required to deliver a product or service to a customer, except for sales and corporate general and administrative costs.
- Some companies in certain industries include R&D costs in COGS, while others break out R&D as an operating cost. This has the effect of overstating COGS in certain industries, causing gross margins to be slightly understated and inventory turns slightly overstated. For more information see the Notes and Definitions section of the Appendix.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry gross margin = (aggregate revenue minus aggregate COGS) divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
EBITDA margin

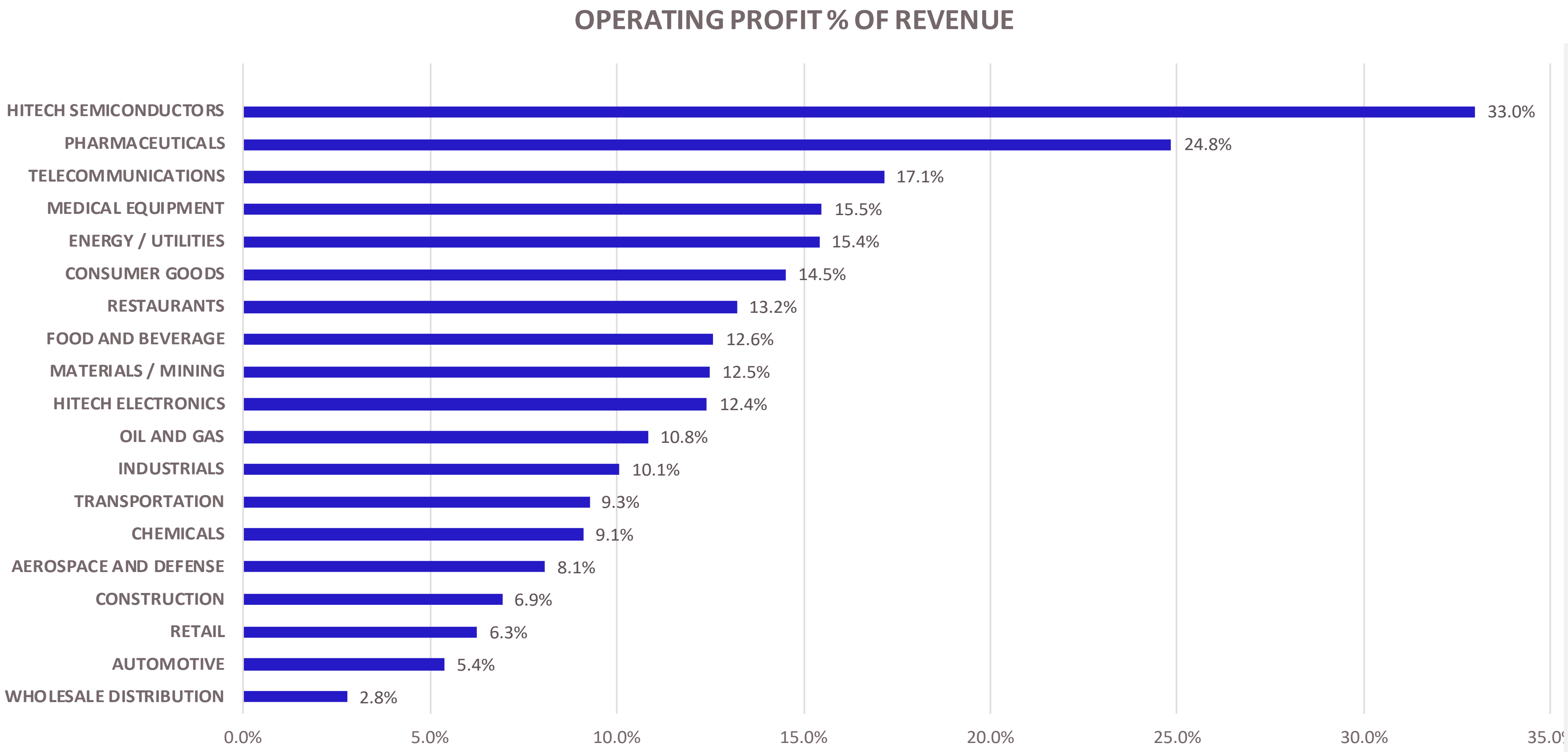


NOTES & INSIGHTS

- Hitech semiconductor, telco, pharmaceuticals, which are industries with high IP content and high gross margins, lead in EBITDA margin.
- Asset intensive industries such as Semiconductors, Telecommunications, and Oil and Gas have relatively high EBITDA margin, but they also have high depreciation and amortization costs. This is reflected when comparing EBITDA margins with operating profit margins.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry EBITDA margin = aggregate EBIDA divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Operating profit margin

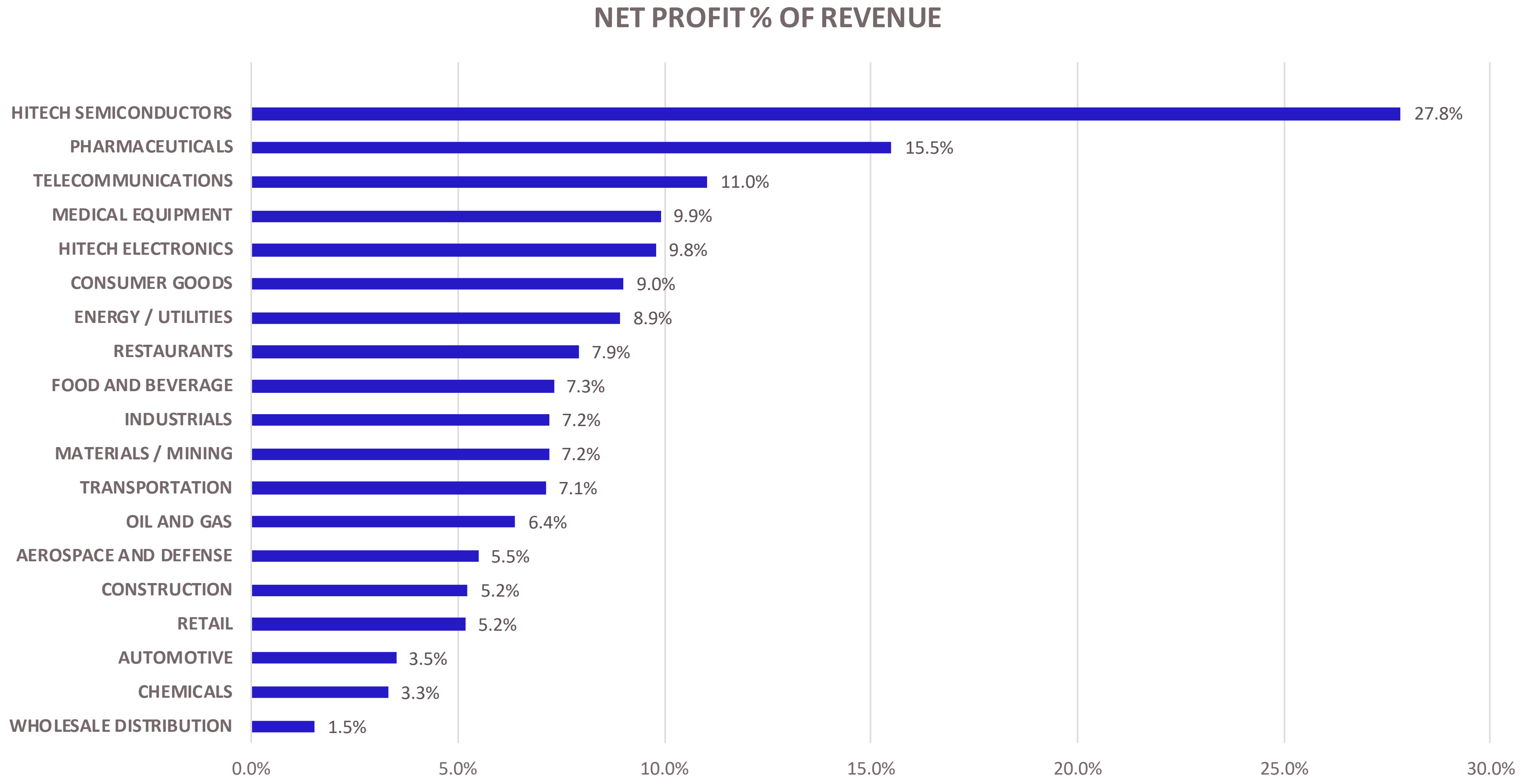


NOTES & INSIGHTS

- Hitech semiconductor and pharmaceuticals, which have high IP content and high gross margins, have the highest operating margins.
- Semiconductor has seen significant operating margin expansion as a result of AI.
- Materials / mining and oil and gas operating income are prone to boom-and-bust cycles based on pricing and supply availability. They are currently coming down off a boom; thus, their operating margins have moderated.
- Operating margins generally follow gross margins, but not always, since some industries must spend significantly more on SG&A and R&D.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry operating margin = aggregate operating income divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Net profit margin

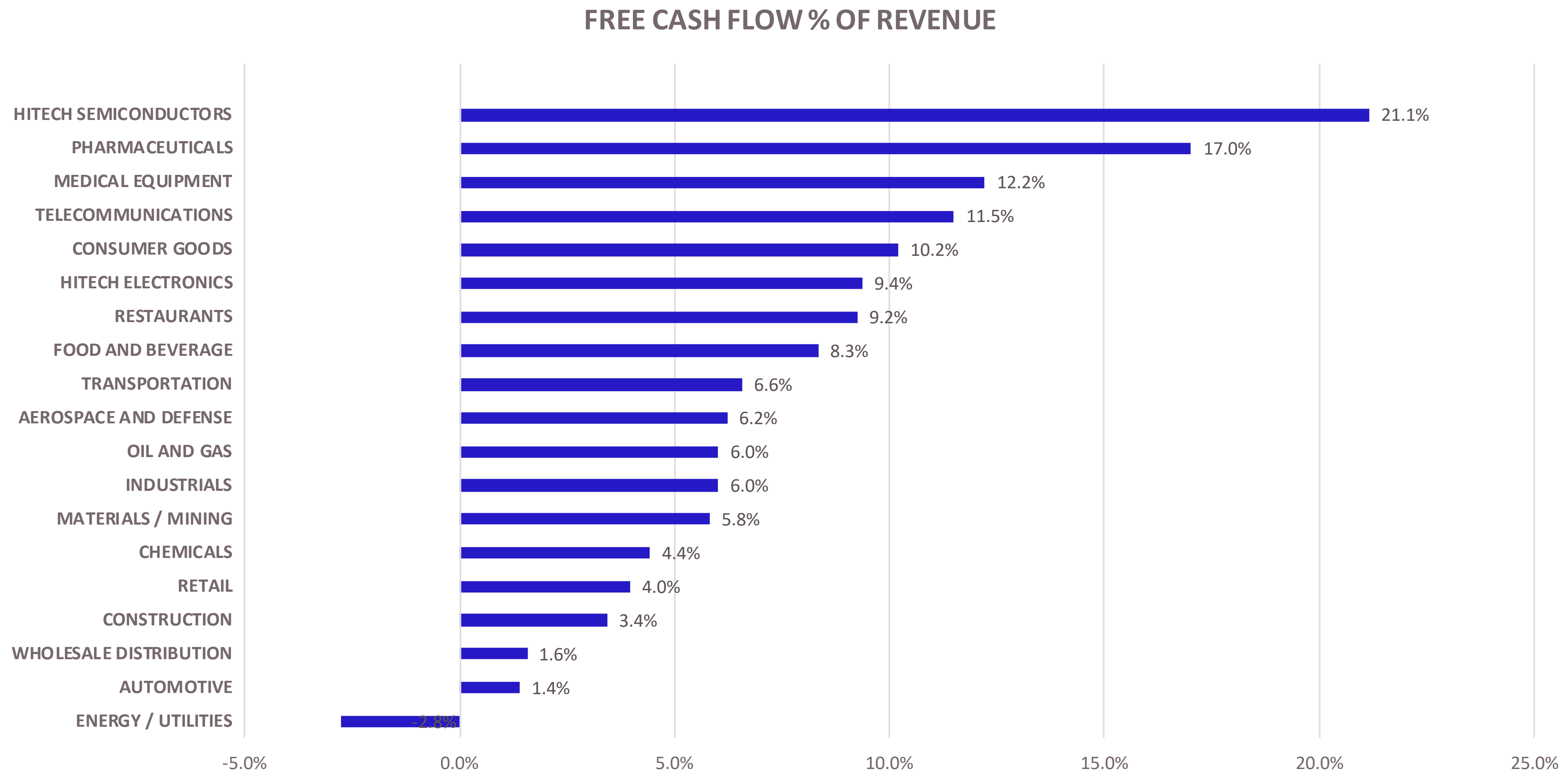


NOTES & INSIGHTS

- Hitech semiconductor, medical equipment, and pharmaceuticals, all industries with high IP content, have the highest net profit margins.
- Semiconductors has seen significant net profit margin expansion because of AI.
- Materials / mining operating income is prone to boom-and-bust cycles based on pricing and supply availability. They are currently coming down off a boom; thus, their net profit margins have moderated.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry operating margin = aggregate operating income divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Free cash Flow

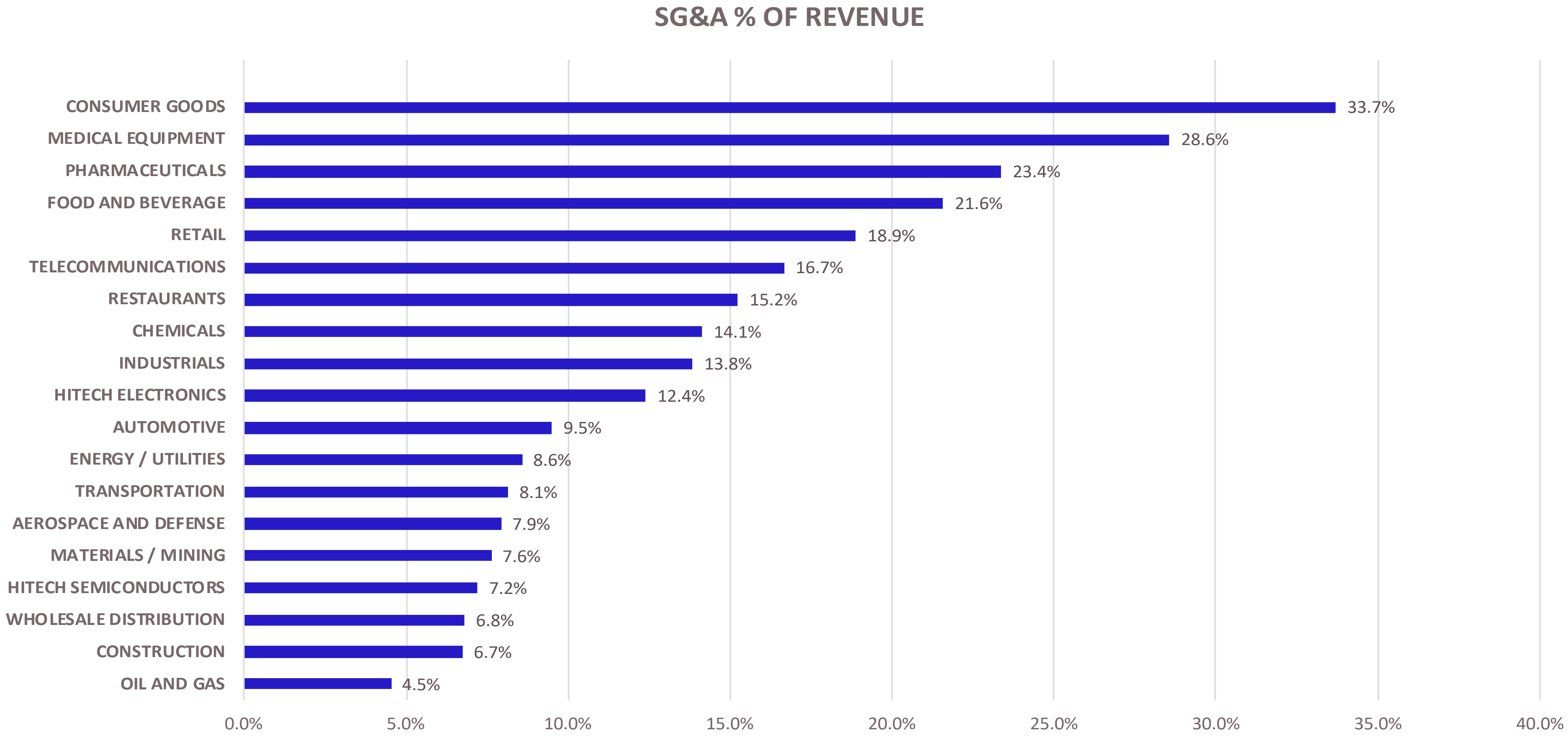


NOTES & INSIGHTS

- Hitech semiconductor, medical equipment, and pharmaceuticals, all industries with high IP content, generate the most cash.
- Energy generates significant operating cash flow, but in certain years its CAPEX overwhelms the operating cash flow to create negative free cash flow.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry free cash flow = (aggregate operating cash flow minus aggregate CAPEX) divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Selling, general, and administrative (SG&A) costs

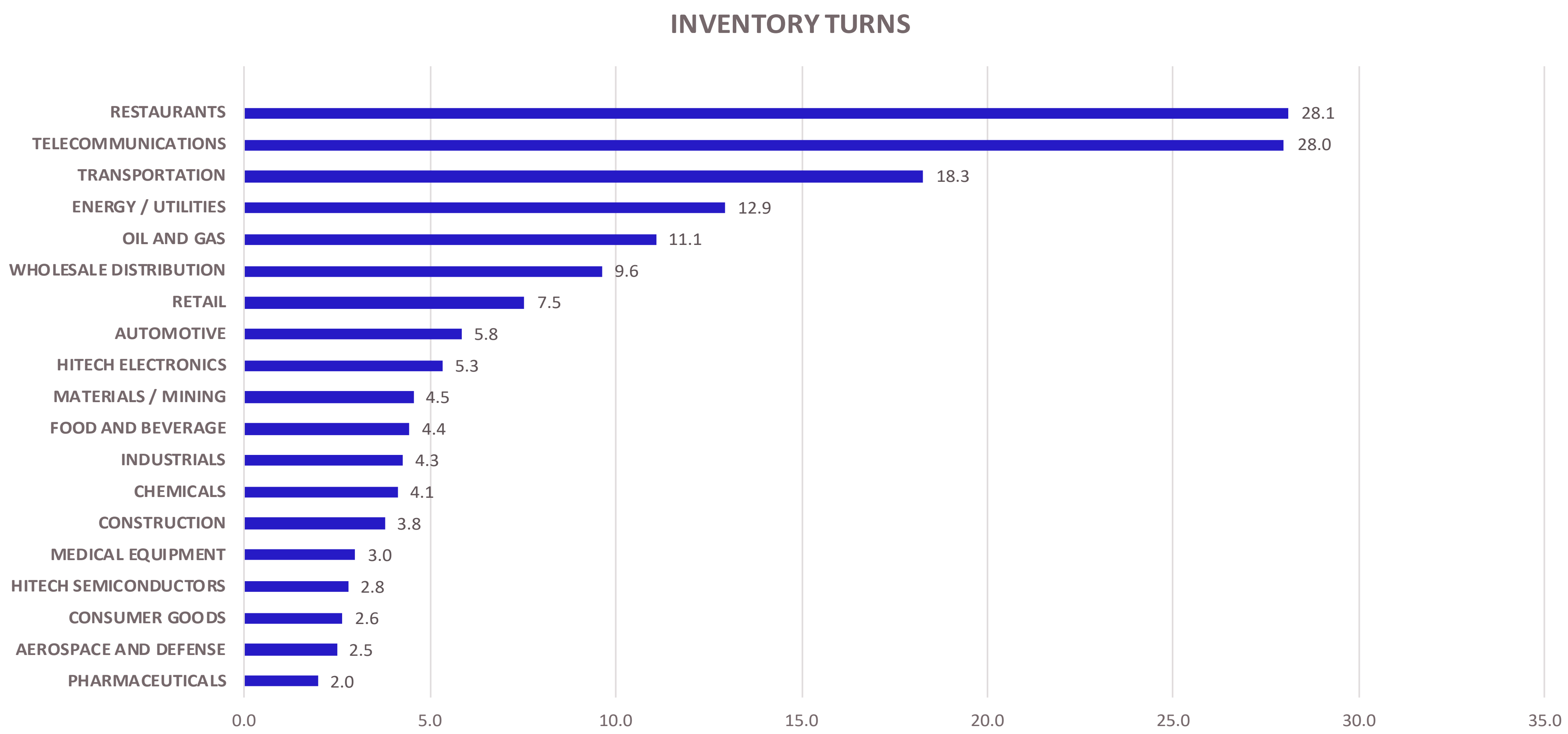


NOTES & INSIGHTS

- Consumer goods, medical equipment, pharmaceuticals, and food and beverage all have significant SG&A costs, typically with large sales/ account teams and high advertising and promotion budgets.
- How products are sold and promoted has significant implications for supply chains, with leading companies providing increasing synchronization between selling, promoting, and supply chain functions.
- Companies with low SG&A are typically B2B companies and/or have a service orientation driven by long-term contracts. Some, like automotive companies, have large dealer networks that provide a retail selling function separate from their financials.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry SG&A % of revenue = aggregate SG&A divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Inventory turns

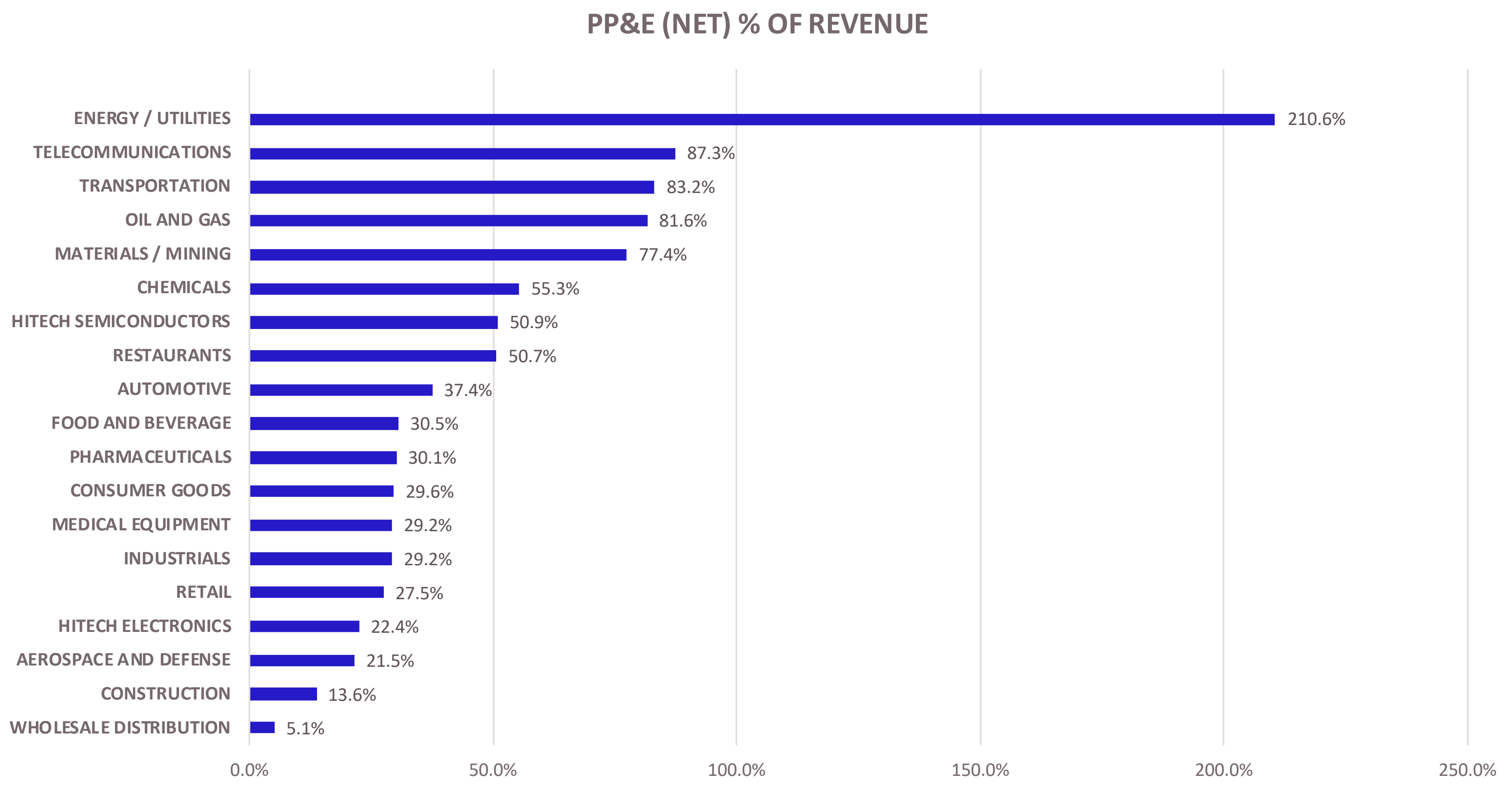


NOTES & INSIGHTS

- The top three inventory turn industries are more service-oriented industries, versus goods-producing, thus they carry low inventories. In the case of restaurants, inventories are perishable and must be turned very quickly. Transportation companies typically do not own the inventory they move, so their inventories are typically spare parts, fuel, and other materials needed to support their fleets.
- Historically, there is a general inverse relationship between gross margin and inventory turns, with high gross margin products typically having fewer turns and vice versa. This is generally but not always true (for example, A&D has low gross margins and low inventory turns).

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry inventory turns = aggregate COGS (annual) divided by aggregate inventory (end of period) for each industry.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Asset intensity: PP&E (net) / revenue

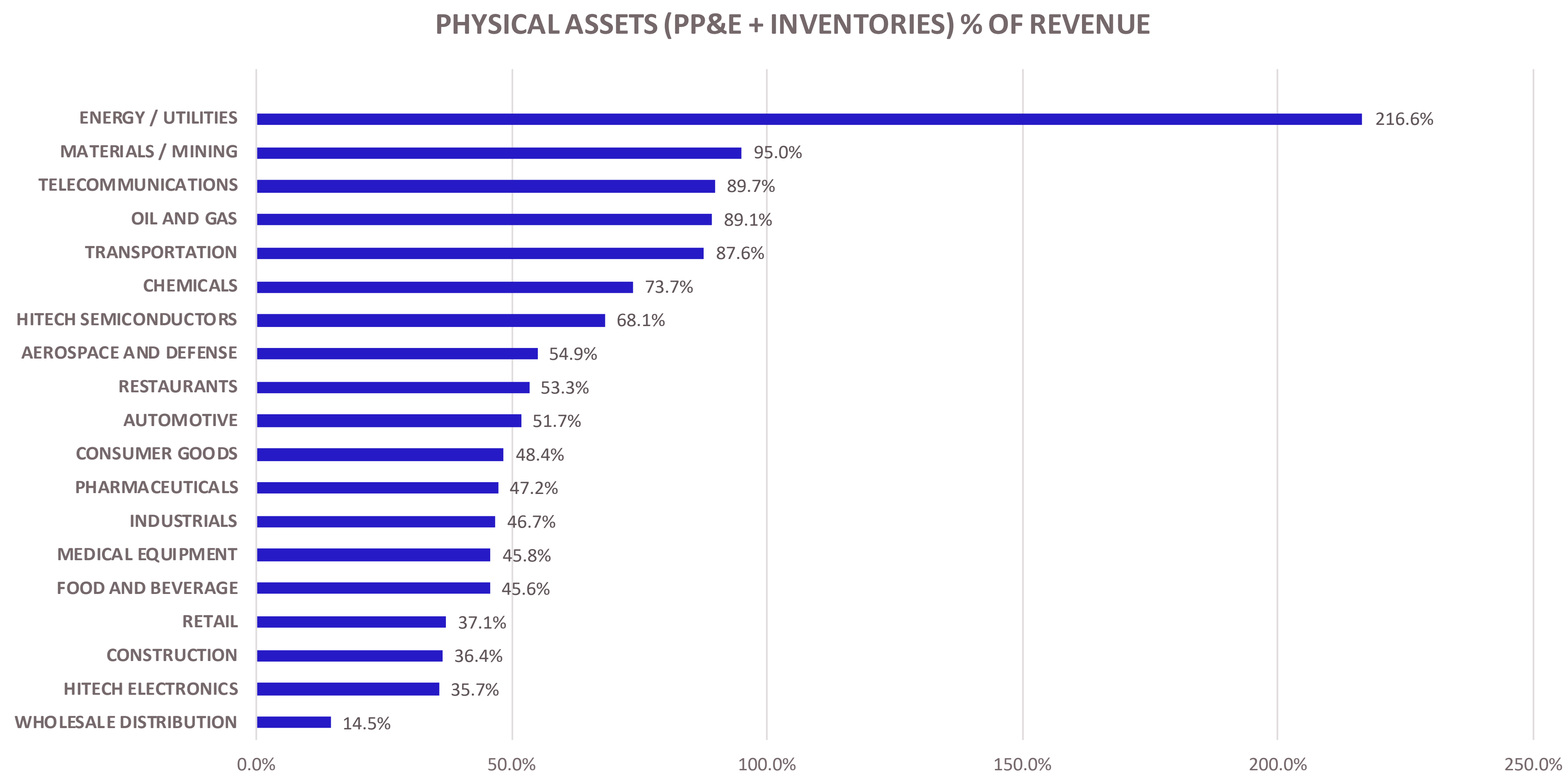


NOTES & INSIGHTS

- PP&E is commonly referred to as “fixed assets.” This analysis includes operating leases as part of fixed assets.
- Energy and utility companies are by far the most asset-intensive, with many such companies requiring greater than $2 of fixed assets for each dollar of revenue.
- Transportation companies (trains, planes, trucks), oil and gas, materials industries, and chemicals are also asset-intensive.
- Asset-intensive industries have a high focus on capacity management and asset utilization.
- Industries that are lower on the asset-intensity list have a higher focus on materials. They typically need to coordinate materials to a bill of materials, or to flow materials (SKUs) quickly across the asset base.
- Some industries such as automotive and A&D require large amounts of physical assets but make highly priced products across the asset base (thus the revenue to fixed assets ratio is lower).

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry asset intensity = aggregate PP&E divided by aggregate revenue for each industry. PP&E is net of deprecation. Operating leases are included as part of PP&E in this analysis.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Asset intensity: physical assets / revenue



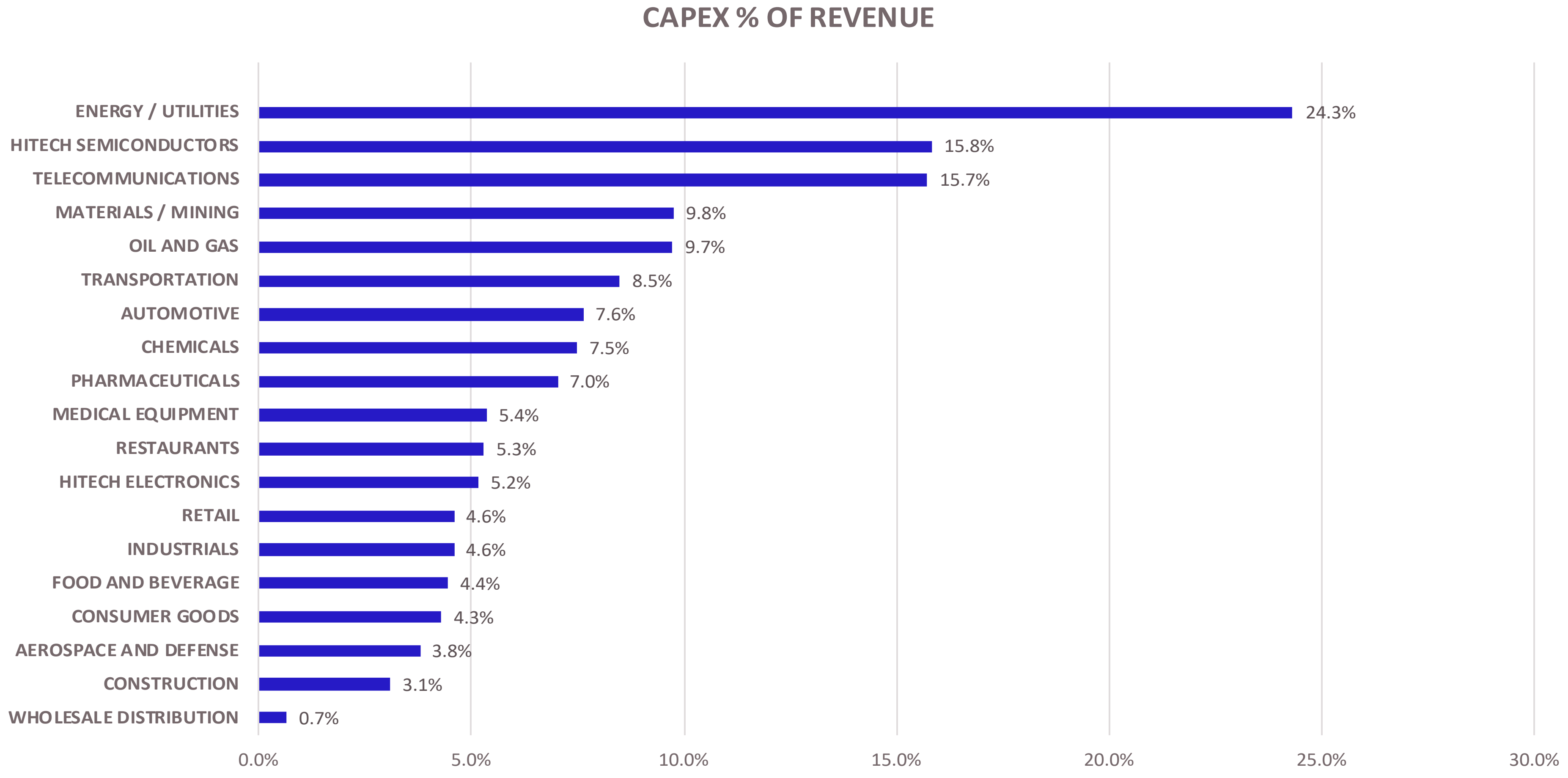
Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry asset intensity = (aggregate PP&E + aggregate inventories) divided by aggregate revenue for each industry. PP&E is net of depreciation. Operating leases are included as part of PP&E in this analysis.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

NOTES & INSIGHTS

- This is a different view of asset-intensity. It adds net PP&E (including operating leases) and inventories.
- Energy and utility companies are by far the most asset-intensive, with many such companies requiring greater than $2 of fixed assets for each dollar of revenue.
- Transportation companies (trains, planes, trucks), oil and gas, materials industries, telecommunications, semiconductor and pharmaceuticals and restaurants are also asset-intensive. Semiconductors and pharmaceuticals have low inventory turns; thus, they move up the list on this chart versus PP&E alone.
- Asset-intensive industries have a high focus on capacity management and asset utilization.
- Industries that are lower on the asset-intensity list have a higher focus on materials. They typically need to coordinate materials to a bill of materials, or to flow materials (SKUs) quickly across the asset base.
- Some industries such as automotive and A&D require large amounts of physical assets but make highly priced products across the asset base (thus the revenue to fixed assets ratio is lower).

Industry Supply Chains

Asset intensity: CAPEX / revenue

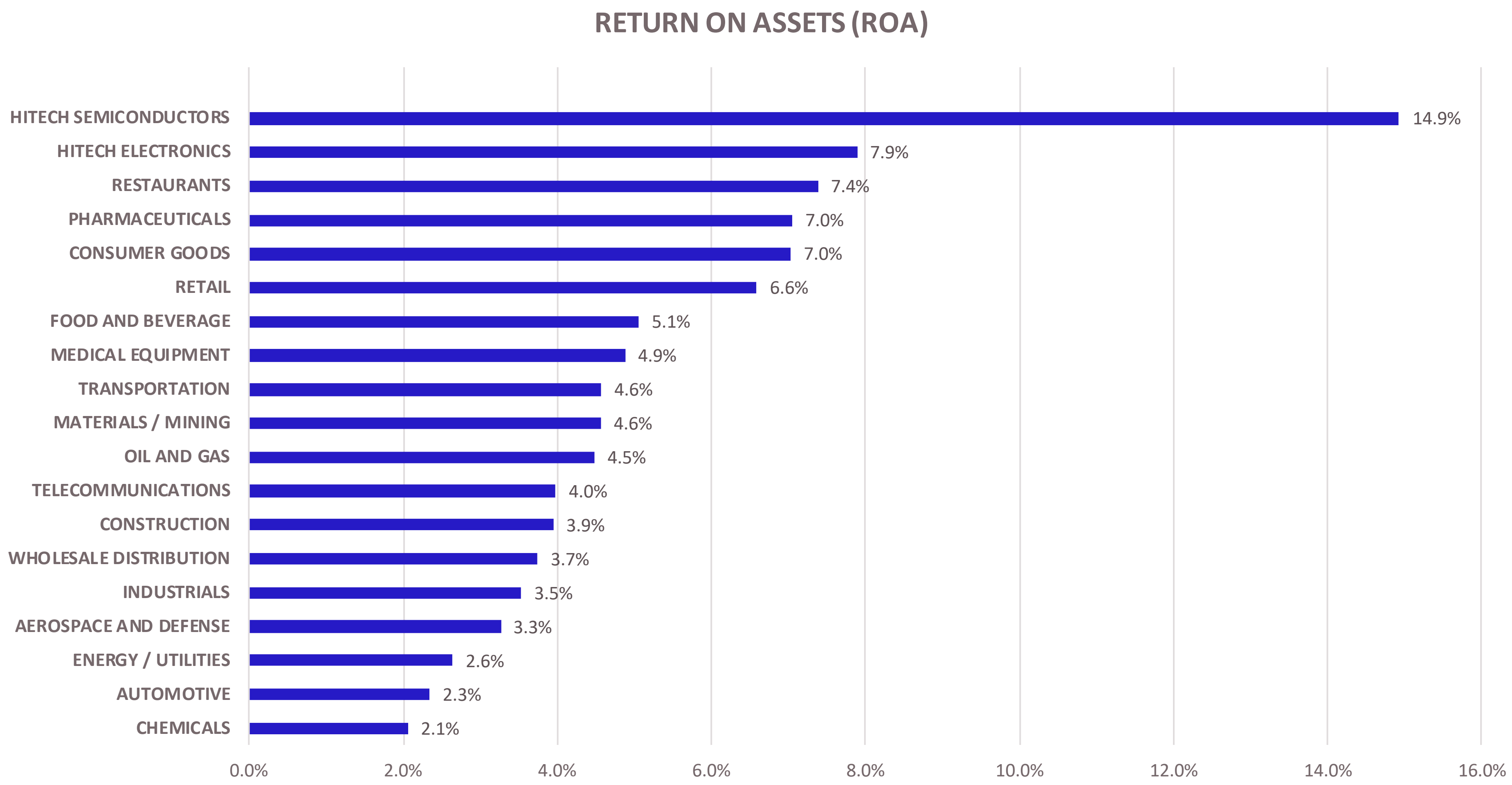


Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry asset intensity = aggregate CAPEX divided by aggregate revenue for each industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

NOTES & INSIGHTS

- Capital expenditures are another way of looking at asset intensity. Companies with large asset bases require large CAPEX to maintain and grow the asset base.
- In this case, Hitech Semi, Energy, Telco, Materials / Mining, and Oil and Gas are the top 5.
- Asset-intensive industries have a high focus on capacity management and asset utilization.
- Industries that are lower on the CAPEX list have a higher focus on materials. They typically need to coordinate materials to a bill of materials, or to flow materials (SKUs) quickly across the asset base.

Industry Supply Chains
Return on assets (ROA)

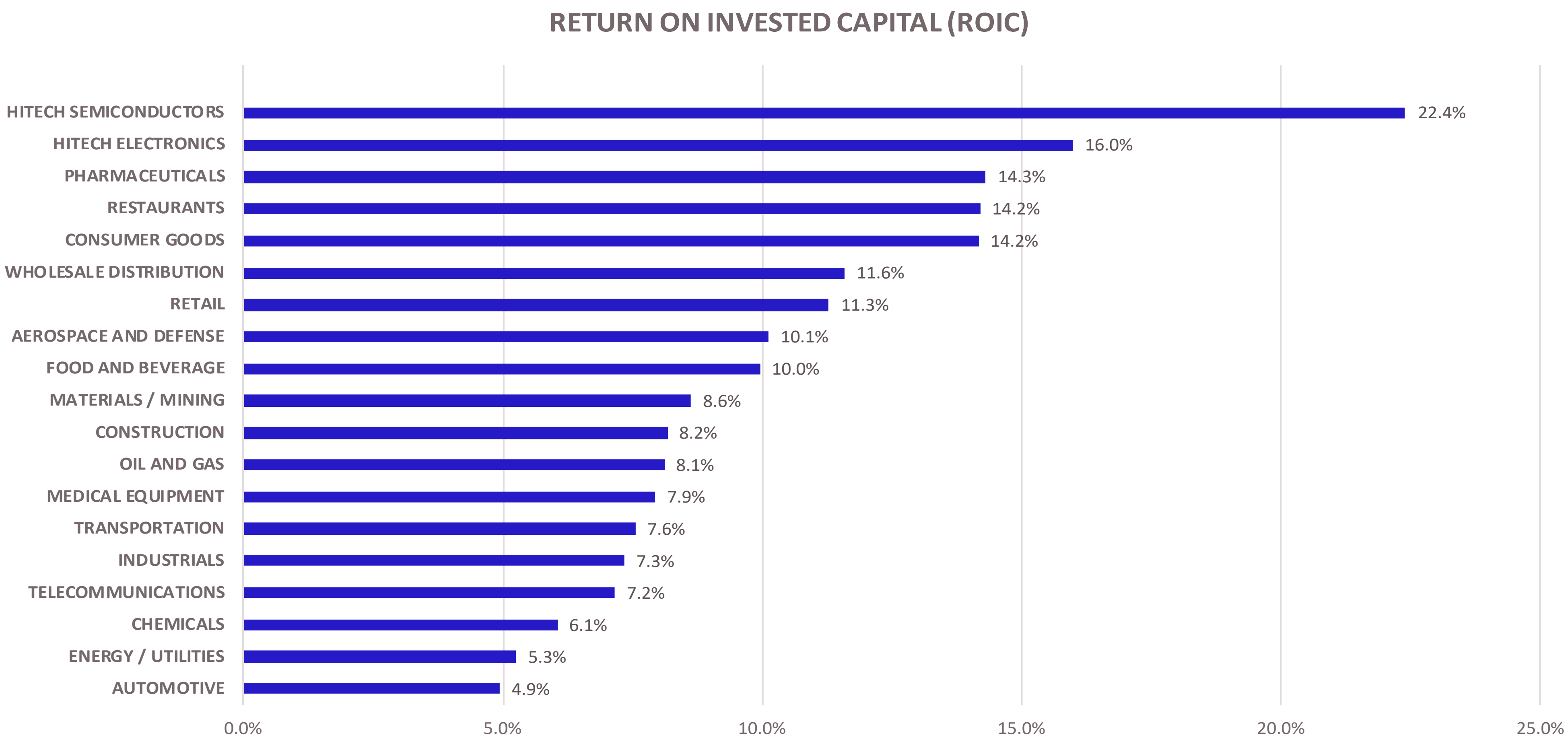


NOTES & INSIGHTS

- Return on assets (ROA) is a measure of how well a company is delivering return on the total assets invested in the business.
- This chart shows the aggregate ROA for each industry.
- For the definition of the ROA metric, see "Notes and Definitions" in the Appendix.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view for all industries.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Return on invested capital (ROIC)

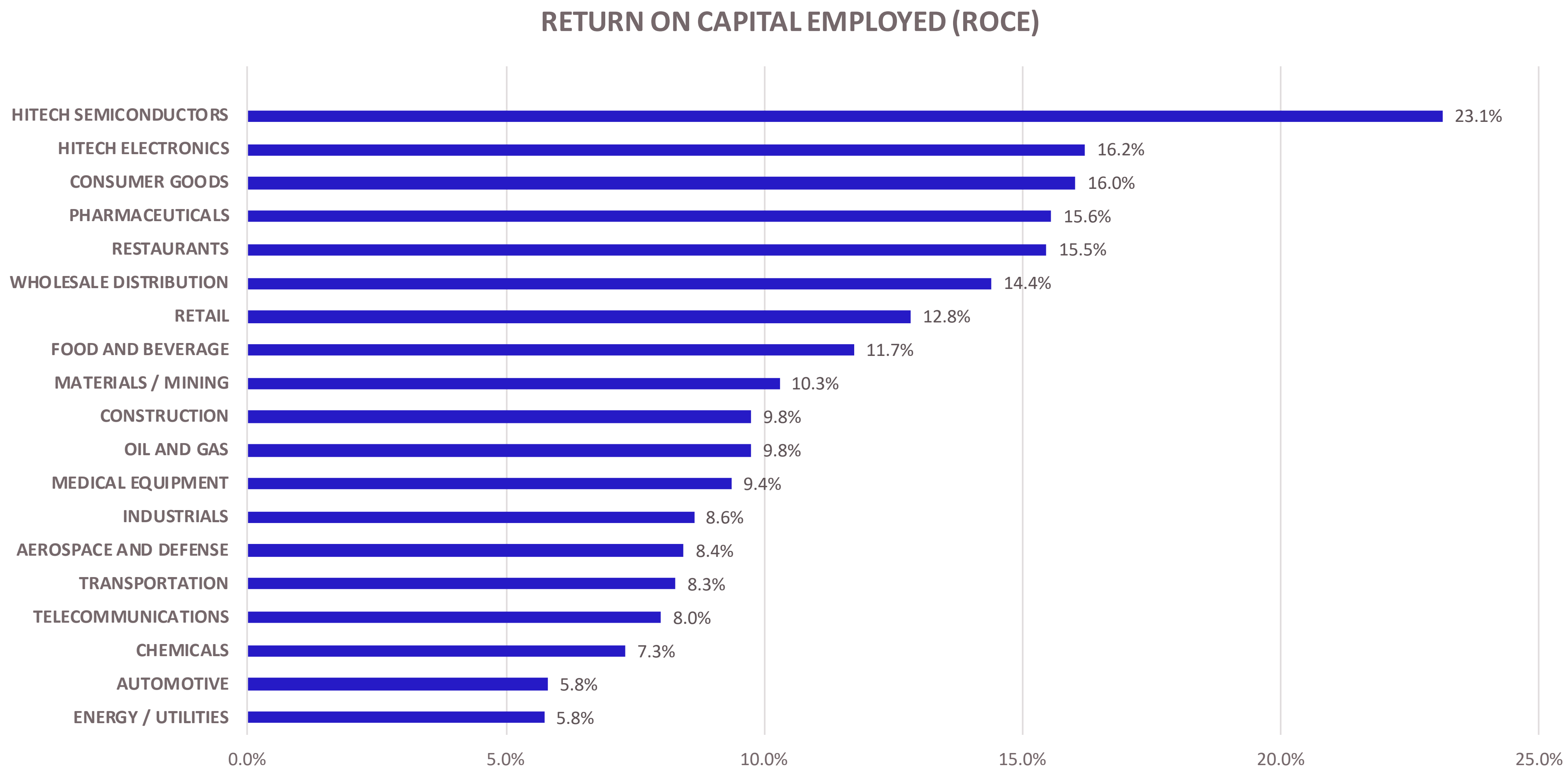


NOTES & INSIGHTS

- Return on invested capital is a measure of how well a company is delivering return on the debt and equity invested in a business.
- This chart shows the aggregate ROIC for each industry.
- For the definition of the ROIC metric, see "Notes and Definitions" in the Appendix.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view for all industries.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Return on capital employed (ROCE)



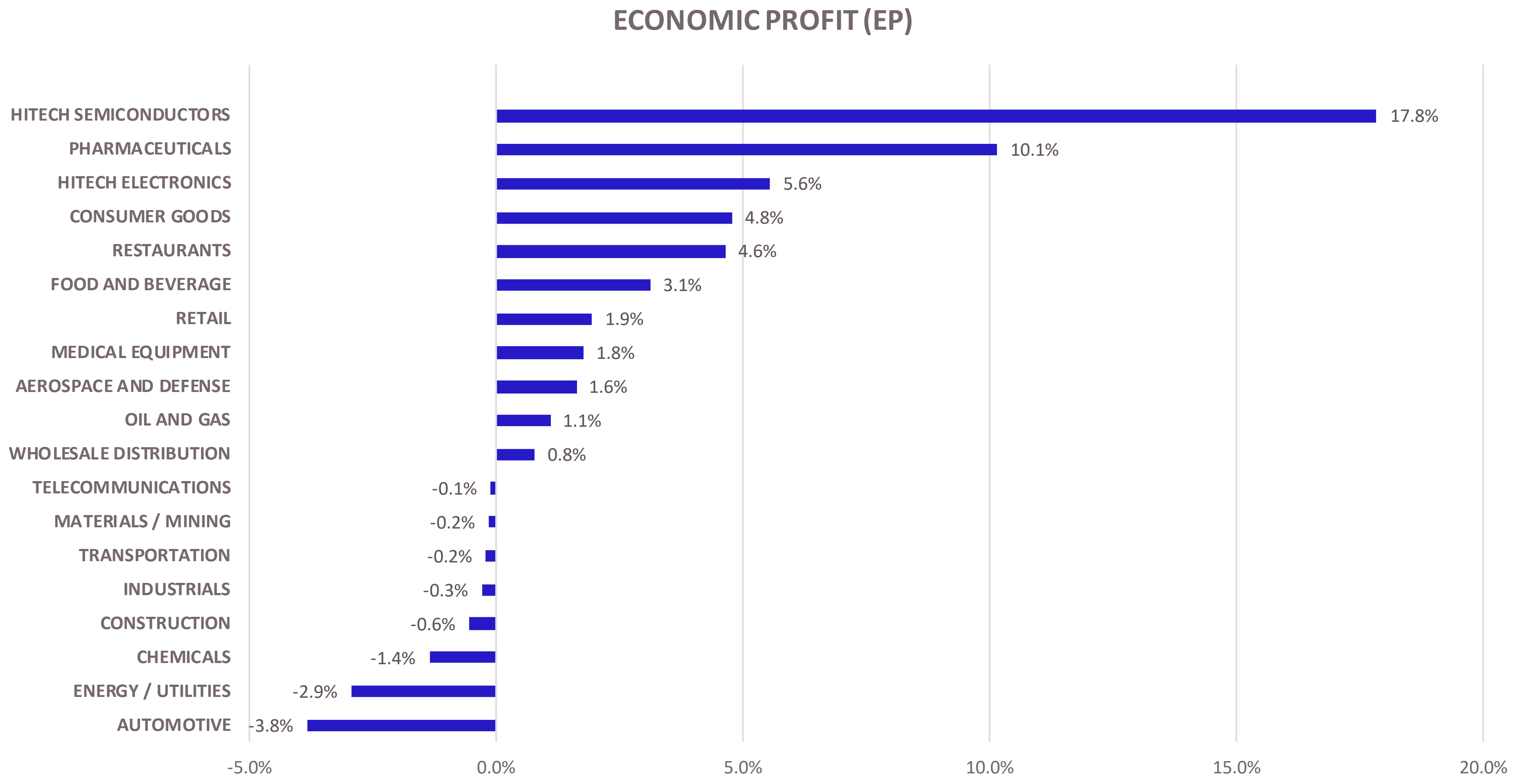
NOTES & INSIGHTS

- Return on capital employed is a measure of how well a company is delivering return on the long-term capital employed in the business.
- This chart shows the aggregate ROCE for each industry.
- For the definition of the ROIC metric, see "Notes and Definitions" in the Appendix.

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view for all industries.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Economic profit (EP)



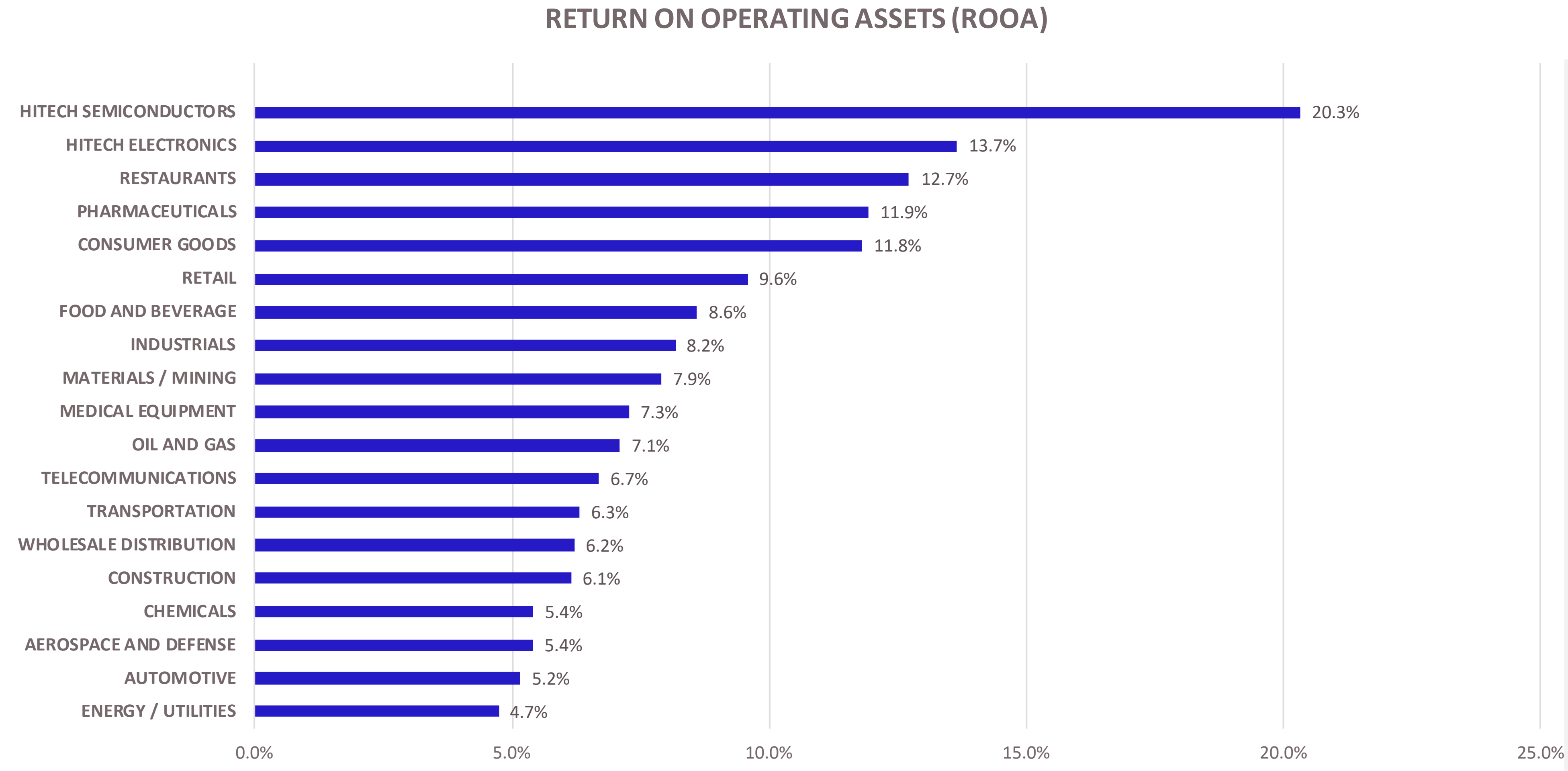
NOTES & INSIGHTS

- Economic profit is a metric that shows whether a company is delivering a return that is above its cost of capital (sometimes called the hurdle rate).
- This chart shows the aggregate EP for each industry.
- As shown, at an aggregate level certain industries do not return above their cost of capital.
- For the definition of the EP metric, see “Notes and Definitions” in the Appendix.

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view for all industries.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Return on operating assets (ROOA)

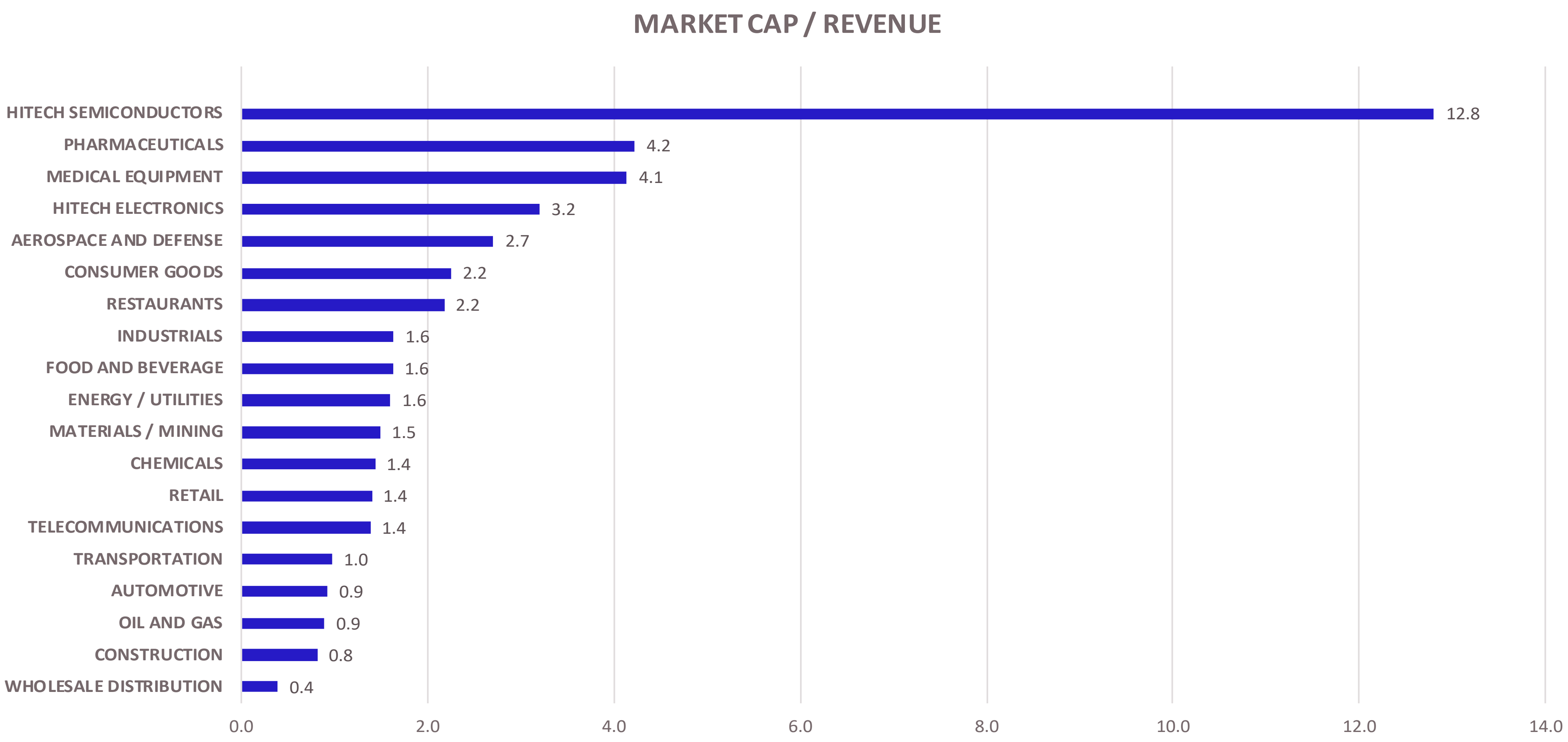


NOTES & INSIGHTS

- Operating assets are the assets needed to drive operations in a manufacturing, distribution, retail, transportation or other company engaged in supply chains.
- ROOA is a metric that shows how well a company is using these operating assets and can be useful in evaluating supply chain operations of a company and an industry.
- This chart shows the aggregate ROOA for each industry.
- For the definition of the ROOA metric, see “Notes and Definitions” in the Appendix.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view for all industries.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Market cap / revenue



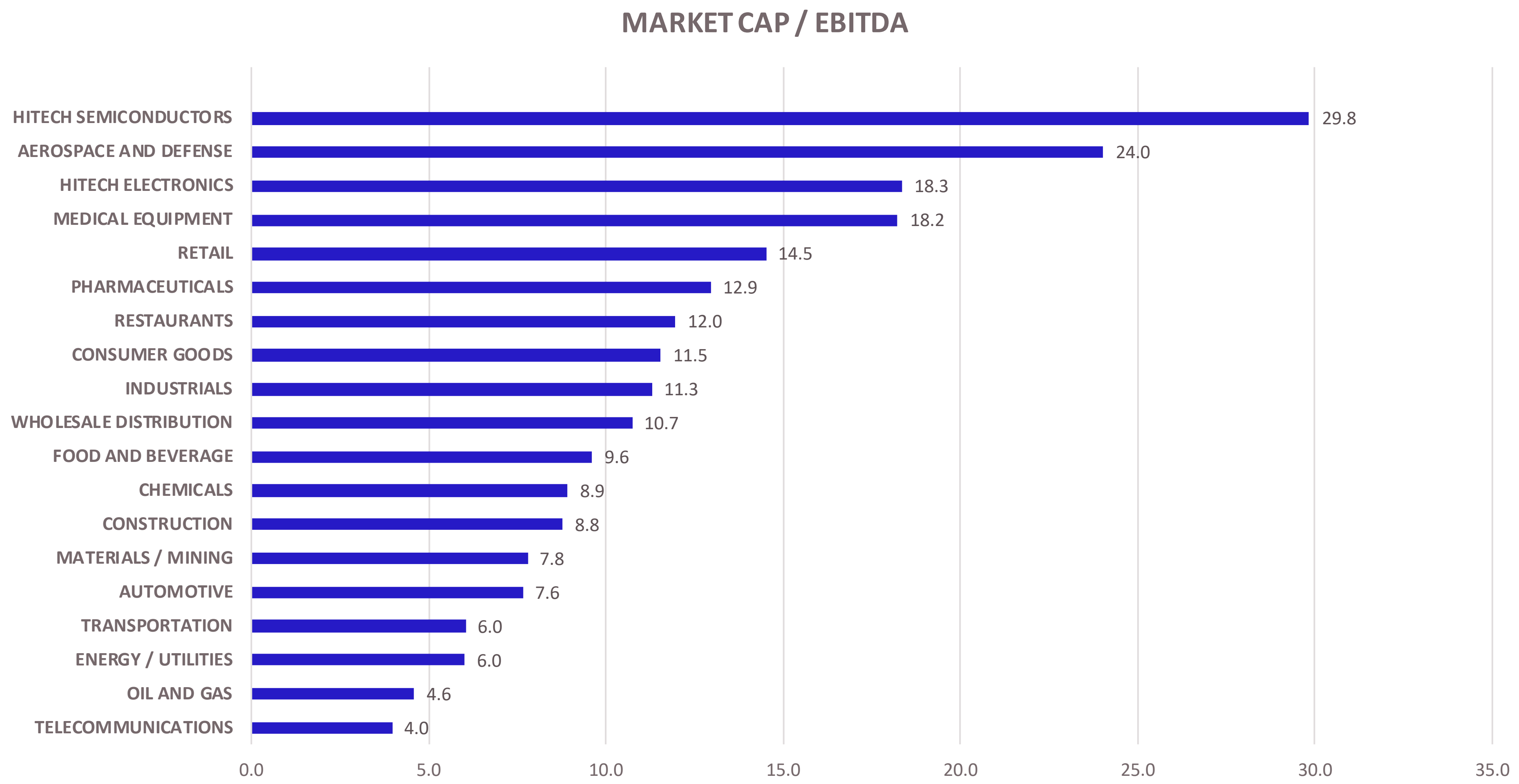
NOTES & INSIGHTS

- Industries with significant intellectual property content enjoy significantly higher market cap multiples than others.
- Industrial-oriented industries have significantly lower multiples.
- Wholesale distribution, which has low gross and operating margins, operates like a pass-through volume business; this could contribute to its low multiples.

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry market cap multiple = aggregate market cap for the industry divided by aggregate revenue for the industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Market cap / EBITDA

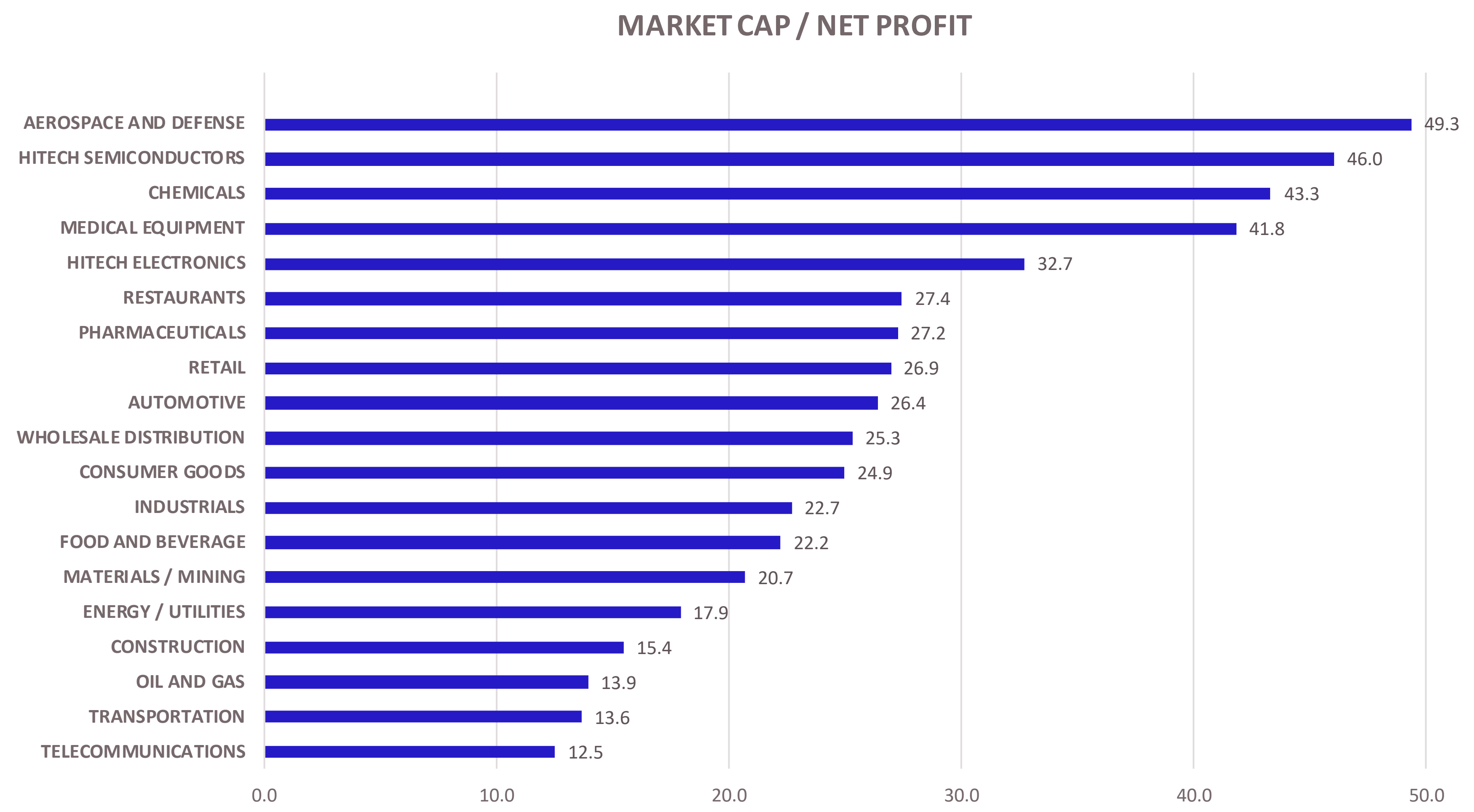


NOTES & INSIGHTS

- Aggregate industry market cap multiples of EBITDA have a wide range.
- Industries with higher IP content tend to have higher multiples.

Notes:
1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry market cap multiple = aggregate market cap for the industry divided by aggregate EBITDA for the industry.
3. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains
Market cap / net income



NOTES & INSIGHTS

- This measure represents the aggregate price / earnings multiple of each industry. It's calculated as aggregate market cap divided by aggregate net profit for each industry.

Notes:

1. All numbers are based on trailing twelve months (TTM) results as of the date on the cover of this report.
2. This is an aggregate view: industry market cap multiple = aggregate market cap for the industry divided by aggregate net income for the industry.
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Historical Information

Comparison of key financial and operational metrics across ten+ years of history.

Industry Supply Chains

Gross margin – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	17.2%	17.1%	17.8%	18.0%	18.7%	15.6%	18.6%	20.2%	20.9%	20.5%	21.0%	21.2%	18.9%
AUTOMOTIVE	16.7%	18.5%	18.9%	19.2%	19.4%	17.7%	18.4%	19.4%	19.9%	20.3%	19.9%	19.3%	19.0%
CHEMICALS	24.5%	24.2%	23.9%	25.7%	26.5%	24.1%	24.6%	25.7%	26.3%	26.7%	25.1%	23.1%	25.0%
CONSTRUCTION	14.3%	14.2%	14.1%	14.5%	13.9%	12.5%	12.8%	13.1%	12.6%	12.4%	11.3%	11.0%	13.1%
CONSUMER GOODS	50.4%	50.0%	49.1%	47.9%	48.4%	46.9%	48.0%	48.0%	47.7%	47.7%	47.3%	47.2%	48.2%
ENERGY / UTILITIES	21.7%	23.6%	20.2%	13.7%	16.4%	21.1%	20.8%	20.0%	22.1%	22.9%	20.3%	18.3%	20.1%
FOOD AND BEVERAGE	33.1%	33.6%	32.6%	32.2%	34.1%	35.0%	35.7%	35.6%	35.9%	35.7%	34.7%	34.3%	34.4%
HITECH ELECTRONICS	29.3%	29.6%	28.5%	28.5%	29.0%	27.9%	27.5%	28.8%	29.0%	28.1%	27.7%	27.7%	28.5%
HITECH SEMICONDUCTORS	52.3%	47.3%	45.6%	48.5%	46.9%	44.2%	45.2%	46.8%	46.0%	44.2%	45.5%	45.2%	46.5%
INDUSTRIALS	25.4%	25.0%	24.2%	23.3%	23.7%	23.3%	24.0%	25.3%	25.7%	25.5%	24.2%	23.4%	24.4%
MATERIALS / MINING	20.3%	19.1%	19.1%	22.7%	26.7%	21.2%	18.6%	20.1%	19.4%	17.2%	15.0%	17.5%	19.7%
MEDICAL EQUIPMENT	49.3%	48.7%	47.9%	48.9%	50.4%	48.7%	50.0%	49.7%	49.9%	50.3%	49.3%	50.1%	49.4%
OIL AND GAS	16.6%	16.5%	18.1%	21.1%	16.6%	9.4%	13.5%	14.3%	13.2%	10.9%	10.5%	12.5%	14.4%
PHARMACEUTICALS	66.2%	65.0%	63.4%	64.0%	63.9%	63.5%	64.7%	65.1%	65.5%	66.2%	65.6%	65.3%	64.9%
RESTAURANTS	27.8%	30.8%	30.7%	29.8%	29.8%	27.1%	30.8%	31.1%	30.7%	29.8%	29.0%	28.1%	29.6%
RETAIL	28.1%	27.6%	26.8%	26.6%	26.3%	26.0%	25.8%	25.8%	25.5%	25.0%	24.4%	24.2%	26.0%
TELECOMMUNICATIONS	35.7%	36.2%	35.1%	34.8%	33.6%	33.5%	33.8%	33.2%	35.5%	35.7%	35.8%	37.7%	35.1%
TRANSPORTATION	18.6%	18.7%	17.6%	18.9%	14.8%	11.5%	18.3%	18.2%	20.2%	20.2%	20.7%	18.5%	18.0%
WHOLESALE DISTRIBUTION	9.6%	9.9%	10.2%	10.3%	10.0%	9.8%	10.4%	10.7%	10.6%	10.7%	10.9%	11.3%	10.4%
ALL INDUSTRIES	**26.0%**	**25.9%**	**25.3%**	**25.6%**	**25.7%**	**24.4%**	**24.6%**	**25.0%**	**25.5%**	**25.3%**	**24.2%**	**23.5%**	**25.0%**

NOTES & INSIGHTS

- At an aggregate level in all industries, gross margins have been remarkably consistent across the past decade, with some compression in 2020 in some industries, possibly due to the impact of the pandemic. However, even in 2020 aggregate numbers did not compress that much, indicating companies were able to lower cost of goods in lock step with revenue.
- The energy industry has seen the widest fluctuations in gross margin in the past five years, largely due to rapid changes in input prices, particularly in Europe.
- High gross margin industries tend to have products that have high IP content and/or low input costs, while low gross margin industries tend to have high input and conversion costs.
- Some companies in certain industries include R&D costs in COGS, while others break out R&D as an operating cost. This has the effect of overstating COGS in certain industries, causing gross margins to be slightly understated and inventory turns slightly overstated. See Note 25 in the Notes and Definitions section of the Appendix.

Notes:
1. This is an aggregate view: industry-level aggregate gross margin = aggregate gross profit for the industry divided by aggregate revenue for the industry. Aggregate gross profit = aggregate revenue minus aggregate COGS.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. “All Industries” is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

EBITDA margin – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	11.3%	12.0%	11.7%	11.5%	12.0%	9.1%	11.6%	13.2%	11.7%	12.5%	12.7%	13.0%	11.8%
AUTOMOTIVE	12.0%	12.2%	13.0%	13.4%	13.3%	12.1%	12.8%	12.9%	13.3%	13.3%	12.4%	11.8%	12.7%
CHEMICALS	16.0%	15.8%	15.7%	18.3%	18.5%	15.6%	16.2%	16.9%	17.0%	16.7%	15.9%	14.2%	16.4%
CONSTRUCTION	9.2%	9.4%	9.0%	9.6%	9.2%	8.0%	8.4%	8.3%	8.1%	7.7%	7.1%	6.7%	8.4%
CONSUMER GOODS	19.5%	19.5%	19.4%	19.3%	20.2%	18.4%	19.1%	17.9%	17.7%	17.5%	17.4%	17.8%	18.6%
ENERGY / UTILITIES	26.6%	27.2%	22.1%	15.8%	19.6%	24.8%	24.3%	22.6%	23.5%	23.9%	21.0%	19.2%	22.5%
FOOD AND BEVERAGE	16.9%	17.2%	16.7%	16.9%	18.0%	18.4%	18.3%	18.0%	18.2%	17.7%	16.7%	16.5%	17.5%
HITECH ELECTRONICS	17.4%	18.8%	16.0%	17.2%	18.0%	15.6%	15.2%	16.8%	16.3%	15.5%	15.8%	15.2%	16.5%
HITECH SEMICONDUCTORS	42.9%	56.7%	34.7%	39.6%	38.4%	35.9%	36.0%	37.2%	34.7%	30.9%	32.0%	31.2%	37.5%
INDUSTRIALS	14.5%	14.6%	14.1%	13.4%	13.4%	12.8%	13.2%	13.4%	13.3%	13.0%	12.9%	12.0%	13.4%
MATERIALS / MINING	19.1%	19.3%	18.3%	22.0%	26.0%	20.6%	17.5%	18.9%	19.1%	16.8%	14.3%	16.5%	19.0%
MEDICAL EQUIPMENT	22.7%	23.8%	22.4%	24.0%	25.9%	23.8%	23.3%	22.8%	22.4%	22.6%	21.5%	21.3%	23.0%
OIL AND GAS	19.4%	19.0%	19.8%	22.2%	19.4%	13.4%	15.8%	16.3%	15.7%	14.6%	13.3%	13.8%	16.9%
PHARMACEUTICALS	32.6%	34.1%	28.7%	33.3%	32.7%	30.0%	29.4%	29.9%	30.8%	31.5%	30.8%	30.7%	31.2%
RESTAURANTS	18.2%	19.2%	19.0%	19.2%	19.5%	16.9%	19.3%	18.6%	19.1%	18.8%	17.9%	17.2%	18.6%
RETAIL	9.6%	10.2%	9.0%	8.8%	8.5%	8.6%	8.2%	7.9%	7.7%	7.8%	7.5%	7.6%	8.4%
TELECOMMUNICATIONS	34.8%	35.5%	34.0%	34.0%	34.4%	34.5%	33.6%	32.1%	31.7%	31.3%	30.8%	29.9%	33.1%
TRANSPORTATION	16.1%	16.5%	16.3%	18.0%	14.8%	10.6%	16.6%	15.3%	16.3%	16.6%	17.0%	14.8%	15.7%
WHOLESALE DISTRIBUTION	3.6%	3.9%	4.0%	4.0%	3.9%	3.5%	3.8%	3.8%	3.8%	3.8%	3.8%	3.9%	3.8%
ALL INDUSTRIES	**17.0%**	**17.5%**	**16.4%**	**17.3%**	**17.3%**	**15.6%**	**16.0%**	**16.1%**	**16.1%**	**15.7%**	**15.0%**	**14.7%**	**16.2%**

NOTES & INSIGHTS

- At an aggregate level in all industries, EBITDA margin has been remarkably consistent across the past decade. Some industries saw significant compression in 2020, due to the impact of the pandemic. This is particularly true for transportation, which includes air travel companies.
- Consistency of EBITDA margin indicates that most industries have operating models driven by structural constraints.
- This also indicates that improvements that companies have put in place have largely accrued to their customers.
- Investments in the past ten years have been about maintaining or growing market share while preserving existing operating models.

Notes:

1. This is an aggregate view: industry-level EBITDA margin = aggregate EBITDA divided by aggregate revenue.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. “All Industries” is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

Operating profit margin – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	8.1%	7.5%	7.9%	7.3%	7.7%	4.4%	7.5%	9.6%	8.1%	8.9%	9.3%	9.5%	8.0%
AUTOMOTIVE	5.4%	6.7%	7.2%	7.1%	6.3%	4.5%	6.0%	6.6%	7.1%	7.3%	6.8%	6.3%	6.4%
CHEMICALS	9.1%	9.0%	9.6%	13.1%	12.5%	8.4%	9.7%	11.1%	11.6%	11.7%	10.7%	9.5%	10.5%
CONSTRUCTION	6.9%	6.8%	6.9%	7.5%	7.0%	5.6%	6.1%	6.3%	6.1%	5.7%	5.1%	4.6%	6.2%
CONSUMER GOODS	14.5%	14.7%	14.9%	14.8%	15.2%	12.7%	14.3%	14.2%	14.1%	14.1%	14.1%	14.6%	14.3%
ENERGY / UTILITIES	15.4%	16.0%	12.4%	7.6%	9.2%	12.9%	12.9%	12.2%	13.1%	13.5%	11.1%	10.2%	12.2%
FOOD AND BEVERAGE	12.6%	13.0%	12.9%	13.1%	14.1%	14.0%	14.2%	14.0%	14.3%	13.7%	12.9%	12.9%	13.5%
HITECH ELECTRONICS	12.4%	11.9%	11.0%	12.4%	13.0%	10.2%	9.8%	11.6%	11.2%	10.5%	10.6%	10.0%	11.2%
HITECH SEMICONDUCTORS	33.0%	24.2%	22.8%	28.3%	26.4%	22.0%	22.4%	25.0%	22.5%	18.8%	20.5%	20.1%	23.8%
INDUSTRIALS	10.1%	10.1%	9.9%	9.3%	8.8%	8.0%	9.2%	9.5%	9.3%	9.0%	9.0%	8.4%	9.2%
MATERIALS / MINING	12.5%	12.0%	12.0%	16.2%	20.2%	13.2%	10.8%	12.6%	11.9%	8.7%	6.4%	9.8%	12.2%
MEDICAL EQUIPMENT	15.5%	14.9%	14.5%	16.4%	18.5%	15.5%	15.5%	15.2%	15.1%	15.6%	14.5%	15.0%	15.5%
OIL AND GAS	10.8%	11.0%	12.9%	16.5%	11.5%	2.0%	7.7%	9.1%	7.1%	3.8%	4.0%	7.7%	8.7%
PHARMACEUTICALS	24.8%	22.5%	19.7%	25.1%	24.4%	20.8%	21.4%	22.0%	22.9%	24.0%	23.1%	22.8%	22.8%
RESTAURANTS	13.2%	14.1%	14.2%	13.0%	12.6%	9.2%	14.0%	14.3%	14.9%	14.5%	13.6%	12.9%	13.4%
RETAIL	6.3%	6.4%	5.7%	5.5%	5.1%	5.2%	5.1%	5.2%	5.2%	5.4%	5.2%	5.4%	5.5%
TELECOMMUNICATIONS	17.1%	16.9%	16.4%	16.2%	16.0%	15.5%	15.9%	15.3%	15.1%	14.7%	15.0%	14.3%	15.7%
TRANSPORTATION	9.3%	9.6%	8.9%	11.0%	6.6%	1.1%	9.1%	9.0%	10.0%	10.4%	10.9%	8.8%	8.7%
WHOLESALE DISTRIBUTION	2.8%	2.9%	3.1%	3.1%	3.0%	2.5%	2.8%	3.0%	3.0%	3.0%	3.0%	3.1%	2.9%
ALL INDUSTRIES	**10.8%**	**10.7%**	**10.5%**	**11.7%**	**11.0%**	**8.4%**	**9.5%**	**10.2%**	**10.0%**	**9.4%**	**8.9%**	**9.2%**	**10.0%**

Notes:
1. This is an aggregate view: industry-level operating margin = aggregate operating profit divided by aggregate revenue.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. “All Industries” is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

NOTES & INSIGHTS

- At an aggregate level in all industries, operating margin was consistent for most of the decade, then saw a pandemic dip in 2020 followed by a dramatic increase in the past two years. The dramatic increase in aggregate operating margin is largely due to dramatic increases in the operating margins of chemicals, high tech semiconductors, oil and gas, and pharmaceuticals. This is the input inflation that is driving a lot of inflation elsewhere in the economy.
- Consistency of operating margin in other industries indicates that most industries have operating models driven by structural constraints.
- This also indicates that improvements that companies have put in place have largely accrued to their customers.
- Investments in the past ten years have been about maintaining or growing market share while preserving existing operating models.

Industry Supply Chains

Net profit margin – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	5.5%	4.9%	6.7%	4.0%	4.6%	0.9%	3.8%	3.1%	4.9%	5.1%	3.7%	6.0%	4.4%
AUTOMOTIVE	3.5%	4.9%	5.8%	6.1%	6.2%	2.5%	4.0%	5.7%	5.4%	5.2%	4.9%	5.1%	4.9%
CHEMICALS	3.3%	4.0%	5.2%	8.7%	8.9%	3.1%	5.1%	7.2%	7.5%	6.7%	6.7%	5.8%	6.0%
CONSTRUCTION	5.2%	5.1%	4.9%	5.3%	4.6%	4.0%	4.3%	4.3%	4.2%	3.7%	3.3%	3.4%	4.3%
CONSUMER GOODS	9.0%	9.4%	9.8%	10.2%	10.7%	7.3%	7.9%	9.2%	10.0%	9.7%	9.1%	10.0%	9.4%
ENERGY / UTILITIES	8.9%	9.8%	6.5%	3.9%	6.0%	6.6%	7.1%	7.0%	7.7%	7.4%	4.6%	4.9%	6.7%
FOOD AND BEVERAGE	7.3%	8.4%	7.2%	8.5%	9.7%	7.5%	8.7%	8.8%	12.0%	9.2%	8.5%	8.6%	8.7%
HITECH ELECTRONICS	9.8%	8.8%	8.5%	10.6%	10.9%	7.7%	7.6%	8.1%	7.3%	7.5%	7.6%	7.6%	8.5%
HITECH SEMICONDUCTORS	27.8%	17.3%	19.4%	24.9%	22.8%	19.6%	18.6%	21.2%	16.6%	13.4%	16.6%	15.6%	19.5%
INDUSTRIALS	7.2%	7.2%	7.0%	7.1%	6.6%	4.8%	6.4%	6.9%	6.8%	5.4%	5.8%	5.9%	6.4%
MATERIALS / MINING	7.2%	6.6%	7.0%	11.8%	14.2%	6.0%	5.6%	8.3%	7.3%	3.3%	-3.9%	3.3%	6.4%
MEDICAL EQUIPMENT	9.9%	9.1%	9.3%	9.0%	14.1%	11.2%	11.1%	9.4%	8.7%	10.0%	8.1%	8.8%	9.9%
OIL AND GAS	6.4%	6.7%	8.8%	10.3%	6.9%	-8.0%	3.7%	5.5%	4.7%	0.5%	-2.2%	3.7%	3.9%
PHARMACEUTICALS	15.5%	10.7%	10.7%	16.8%	18.7%	10.6%	14.6%	15.3%	10.4%	14.4%	16.3%	16.3%	14.2%
RESTAURANTS	7.9%	8.7%	9.7%	8.0%	9.2%	4.4%	9.4%	10.4%	9.5%	8.9%	7.8%	6.3%	8.4%
RETAIL	5.2%	4.8%	4.0%	3.7%	3.8%	3.7%	3.3%	3.3%	3.3%	3.5%	2.9%	3.3%	3.7%
TELECOMMUNICATIONS	11.0%	9.2%	7.4%	5.5%	12.9%	6.1%	7.8%	8.9%	11.7%	6.9%	8.0%	8.7%	8.7%
TRANSPORTATION	7.1%	7.2%	7.8%	9.7%	5.6%	-2.9%	5.9%	6.1%	7.8%	6.0%	6.9%	4.8%	6.0%
WHOLESALE DISTRIBUTION	1.5%	1.6%	1.9%	1.9%	1.4%	0.5%	1.5%	1.6%	2.0%	1.8%	1.4%	1.8%	1.6%
ALL INDUSTRIES	**7.2%**	**6.8%**	**7.0%**	**8.0%**	**8.1%**	**3.7%**	**5.8%**	**6.7%**	**6.8%**	**5.5%**	**4.5%**	**5.6%**	**6.2%**

NOTES & INSIGHTS

- At an aggregate level in all industries, net profit margin was consistent for most of the decade, then saw a pandemic dip in 2020 followed by a dramatic increase in the past several years.
- More recently, the surge profit margins in Semiconductors – driven by AI – has elevated the overall profit margin.

Notes:
1. This is an aggregate view: industry-level operating margin = aggregate operating profit divided by aggregate revenue.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. "All Industries" is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains

Free cash flow – ten-year history

NOTES & INSIGHTS

- At an aggregate level in all industries, free cash flow is significantly above levels from earlier in the decade.
- More recently, the surge in cash flow margins in Semiconductors – driven by AI – has elevated the overall numbers.

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	6.2%	4.8%	6.6%	7.5%	5.5%	-2.3%	4.0%	4.4%	5.3%	3.4%	5.6%	6.2%	4.8%
AUTOMOTIVE	1.4%	1.2%	2.8%	2.7%	4.1%	3.3%	0.9%	0.3%	-0.2%	1.0%	0.3%	0.2%	1.5%
CHEMICALS	4.4%	4.2%	5.7%	6.3%	7.6%	7.0%	5.2%	5.6%	4.3%	5.3%	5.0%	3.7%	5.4%
CONSTRUCTION	3.4%	3.3%	4.0%	2.5%	3.4%	4.3%	2.2%	2.5%	3.4%	3.1%	2.4%	1.0%	3.0%
CONSUMER GOODS	10.2%	11.2%	9.5%	8.5%	12.9%	12.2%	10.2%	9.1%	8.9%	9.1%	8.2%	7.6%	9.8%
ENERGY / UTILITIES	-2.8%	-1.7%	-3.1%	-5.3%	-3.5%	-1.9%	-0.8%	1.5%	0.3%	2.5%	1.9%	1.3%	-1.0%
FOOD AND BEVERAGE	8.3%	8.4%	7.9%	6.8%	9.3%	9.1%	8.5%	8.1%	7.2%	8.5%	8.2%	7.3%	8.1%
HITECH ELECTRONICS	9.4%	9.9%	7.7%	7.7%	8.8%	10.0%	7.7%	7.7%	6.8%	8.0%	8.4%	8.3%	8.4%
HITECH SEMICONDUCTORS	21.1%	17.2%	11.8%	15.5%	19.5%	20.5%	18.6%	19.2%	16.7%	15.4%	15.7%	14.8%	17.2%
INDUSTRIALS	6.0%	5.5%	4.4%	3.2%	4.9%	7.5%	4.8%	4.7%	4.1%	6.7%	3.6%	2.4%	4.8%
MATERIALS / MINING	5.8%	5.3%	5.5%	7.3%	11.8%	8.5%	6.8%	6.3%	7.3%	5.1%	3.4%	2.8%	6.3%
MEDICAL EQUIPMENT	12.2%	11.7%	10.0%	10.5%	14.6%	14.3%	11.2%	10.9%	11.4%	10.8%	10.0%	11.5%	11.6%
OIL AND GAS	6.0%	6.8%	7.7%	10.0%	9.1%	4.0%	4.2%	5.1%	4.1%	1.1%	-0.4%	0.0%	4.8%
PHARMACEUTICALS	17.0%	16.0%	14.4%	19.7%	20.8%	17.5%	17.7%	19.5%	18.2%	18.4%	17.6%	17.7%	17.9%
RESTAURANTS	9.2%	8.9%	9.4%	8.2%	11.5%	5.7%	9.3%	11.7%	8.0%	8.7%	8.5%	4.9%	8.7%
RETAIL	4.0%	5.1%	4.3%	2.9%	4.7%	5.3%	4.1%	3.7%	3.6%	3.3%	3.1%	2.9%	3.9%
TELECOMMUNICATIONS	11.5%	11.0%	9.9%	8.7%	7.5%	11.5%	9.8%	8.1%	7.5%	5.7%	5.3%	6.7%	8.6%
TRANSPORTATION	6.6%	6.7%	6.6%	9.7%	6.6%	-0.7%	4.7%	2.7%	2.1%	3.1%	3.3%	1.5%	4.4%
WHOLESALE DISTRIBUTION	1.6%	1.8%	2.2%	1.5%	1.7%	2.4%	2.1%	1.7%	1.5%	2.1%	2.3%	1.4%	1.9%
ALL INDUSTRIES	**6.1%**	**6.1%**	**5.8%**	**6.0%**	**7.2%**	**6.4%**	**5.4%**	**5.4%**	**4.9%**	**4.9%**	**4.1%**	**3.5%**	**5.4%**

Notes:

1. This is an aggregate view: industry free cash flow = (aggregate operating cash flow minus aggregate CAPEX) divided by aggregate revenue for each industry.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. “All Industries” is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

SG&A % revenue – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	7.9%	8.1%	9.2%	9.0%	9.2%	9.9%	9.6%	8.8%	9.2%	9.1%	8.7%	9.0%	9.0%
AUTOMOTIVE	9.5%	9.3%	9.2%	9.4%	10.3%	10.9%	10.3%	10.5%	10.7%	10.6%	10.7%	10.7%	10.2%
CHEMICALS	14.1%	14.0%	13.3%	11.6%	12.7%	14.2%	13.8%	13.4%	13.3%	13.9%	13.1%	12.1%	13.3%
CONSTRUCTION	6.7%	6.6%	6.4%	6.3%	6.2%	5.9%	6.3%	6.2%	6.0%	6.2%	5.6%	5.8%	6.2%
CONSUMER GOODS	33.7%	34.2%	33.5%	32.4%	32.7%	33.9%	32.8%	32.3%	33.6%	32.2%	32.7%	32.3%	33.0%
ENERGY / UTILITIES	8.6%	8.2%	7.9%	6.4%	8.0%	9.5%	9.5%	9.9%	10.8%	10.1%	9.2%	8.3%	8.9%
FOOD AND BEVERAGE	21.6%	21.3%	20.2%	19.7%	20.7%	21.8%	22.1%	21.8%	22.3%	22.3%	22.1%	21.9%	21.5%
HITECH ELECTRONICS	12.4%	13.2%	13.0%	12.2%	12.4%	13.8%	13.9%	13.7%	14.3%	14.3%	14.0%	13.0%	13.4%
HITECH SEMICONDUCTORS	7.2%	9.0%	9.0%	8.4%	8.6%	9.3%	9.7%	9.4%	10.5%	11.2%	10.6%	11.5%	9.5%
INDUSTRIALS	13.8%	13.7%	13.7%	13.2%	13.8%	14.4%	13.9%	14.7%	15.1%	14.5%	13.7%	13.5%	14.0%
MATERIALS / MINING	7.6%	6.9%	6.7%	6.3%	6.2%	7.6%	7.3%	7.5%	7.9%	8.3%	8.3%	7.4%	7.3%
MEDICAL EQUIPMENT	28.6%	28.7%	28.3%	27.1%	26.9%	28.4%	29.6%	29.8%	30.0%	29.2%	29.6%	29.6%	28.8%
OIL AND GAS	4.5%	4.3%	3.7%	3.1%	3.9%	5.4%	4.0%	3.9%	4.6%	5.4%	4.7%	3.5%	4.3%
PHARMACEUTICALS	23.4%	23.2%	23.7%	21.9%	22.1%	24.2%	25.0%	27.4%	27.1%	26.9%	27.7%	27.3%	25.0%
RESTAURANTS	15.2%	14.5%	14.5%	15.2%	16.8%	16.5%	15.4%	15.5%	14.6%	13.0%	13.8%	13.3%	14.9%
RETAIL	18.9%	19.3%	19.2%	19.4%	19.9%	19.6%	19.7%	19.3%	19.7%	18.6%	18.4%	17.9%	19.2%
TELECOMMUNICATIONS	16.7%	17.0%	16.8%	16.7%	16.2%	17.0%	16.3%	17.2%	17.7%	18.0%	18.0%	20.9%	17.4%
TRANSPORTATION	8.1%	7.6%	7.9%	7.3%	7.6%	8.9%	8.3%	8.1%	8.4%	8.4%	8.4%	8.2%	8.1%
WHOLESALE DISTRIBUTION	6.8%	7.2%	7.3%	7.4%	7.3%	7.7%	7.9%	8.1%	7.8%	7.7%	7.9%	8.1%	7.6%
ALL INDUSTRIES	**13.2%**	**13.2%**	**12.9%**	**12.1%**	**13.1%**	**14.2%**	**13.4%**	**13.3%**	**13.9%**	**14.0%**	**13.5%**	**12.6%**	**13.3%**

NOTES & INSIGHTS

- At an aggregate level in all industries, SG&A expense has been remarkably consistent across the past decade. Consumer goods, medical equipment, pharmaceuticals, telco, and food and beverage are the perennial leaders in SG&A. These industries have large advertising and promotions budgets, along with large sales/account teams.
- SG&A has a significant impact on supply chain operations, with leading companies increasingly synchronizing their sales activities with their supply chains.
- Commodity and service-oriented supply chains such as transportation, wholesale, oil and gas, and materials must keep their selling and administrative costs low due to their low gross margins.

Notes:
1. This is an aggregate view: industry-level SG&A = aggregate SG&A divided by aggregate revenue.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. "All Industries" is the aggregate value for all industries (not the average of the percentages for each industry).
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Industry Supply Chains

Inventory turns – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	2.5	2.5	2.5	2.5	2.6	2.4	2.7	2.9	2.8	3.1	3.0	3.2	2.7
AUTOMOTIVE	5.8	6.1	5.8	5.7	6.2	5.9	7.0	6.8	6.7	7.1	7.3	7.5	6.5
CHEMICALS	4.1	4.3	4.3	4.5	4.6	4.6	4.7	4.6	4.5	5.0	5.4	5.7	4.7
CONSTRUCTION	3.8	3.9	4.0	4.0	4.1	3.8	4.2	4.1	4.0	3.9	4.1	4.2	4.0
CONSUMER GOODS	2.6	2.8	2.7	2.7	2.9	2.9	3.0	3.2	3.1	3.3	3.3	3.4	3.0
ENERGY / UTILITIES	12.9	12.7	13.3	15.5	15.2	12.9	14.3	15.0	14.6	15.5	16.1	17.2	14.6
FOOD AND BEVERAGE	4.4	4.5	4.6	4.5	4.6	4.5	4.7	4.8	4.8	4.9	5.1	5.2	4.7
HITECH ELECTRONICS	5.3	5.6	5.5	5.5	6.1	6.6	7.4	6.9	7.0	7.9	8.0	8.3	6.7
HITECH SEMICONDUCTORS	2.8	2.7	2.6	3.0	3.5	3.5	3.7	3.6	3.7	3.9	3.9	4.1	3.4
INDUSTRIALS	4.3	4.6	4.6	4.6	4.7	4.7	5.0	4.8	4.6	4.6	4.8	4.7	4.7
MATERIALS / MINING	4.5	4.7	4.5	4.6	4.5	4.5	5.0	4.8	4.7	4.7	5.2	5.2	4.8
MEDICAL EQUIPMENT	3.0	3.2	3.0	3.2	3.4	3.3	3.6	3.6	3.6	3.7	3.6	3.7	3.4
OIL AND GAS	11.1	11.6	11.4	12.1	10.9	9.5	11.7	12.7	10.7	9.9	12.4	14.1	11.5
PHARMACEUTICALS	2.0	2.2	2.1	2.4	2.4	2.2	2.2	2.3	2.3	2.3	2.4	2.5	2.3
RESTAURANTS	28.1	29.1	27.1	24.1	26.1	26.8	28.4	29.0	29.6	30.5	31.9	30.4	28.4
RETAIL	7.5	8.4	8.1	7.8	8.1	7.8	7.5	7.4	7.3	7.3	7.4	7.5	7.7
TELECOMMUNICATIONS	28.0	30.3	28.4	28.0	29.1	29.7	24.6	27.3	29.2	29.9	28.0	29.7	28.5
TRANSPORTATION	18.3	21.4	21.4	24.2	22.8	22.2	24.1	25.5	21.2	24.0	24.4	20.6	22.5
WHOLESALE DISTRIBUTION	9.6	9.7	9.5	9.1	9.0	9.5	9.5	9.4	9.6	9.5	9.8	9.3	9.5
ALL INDUSTRIES	**5.8**	**6.1**	**6.0**	**6.2**	**6.2**	**5.9**	**6.4**	**6.6**	**6.4**	**6.5**	**6.9**	**7.3**	**6.4**

NOTES & INSIGHTS

- At an aggregate level in all industries, all 19 industries have inventory turns (on a TTM basis) that are at or below their past decade average; All 19 industries also have inventory turns today that are below their averages in 2012.
- While there is much discussion about supply chains becoming "too lean," inventory numbers do not support that assertion.
- Inventory turn declines are likely due to multiple factors, including lengthened lead times associated with global sourcing, e-Commerce competition, along with product variety, SKU-count and variant increases, and shortened, multiple delivery paths (omni-channel). Some of the drop is also due to accounting rule changes that impacted certain industries in the middle of the decade.
- This also indicates that improvements that companies have put in place have largely accrued to their customers.
- Investments in the past ten years have been about maintaining or growing market share while preserving existing operating models.

Notes:
1. This is an aggregate view: industry-level industry turns = aggregate COGS (annual) divided by aggregate inventory (end of period).
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. "All Industries" is the aggregate value for all industries (not the average of the percentages for each industry).
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Industry Supply Chains

Asset intensity: PP&E (net) / revenue – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	21.5%	22.3%	23.1%	23.9%	24.5%	26.2%	26.4%	23.1%	24.9%	23.1%	23.6%	21.5%	23.7%
AUTOMOTIVE	37.4%	35.0%	35.2%	36.8%	40.9%	45.5%	39.6%	36.7%	37.9%	36.5%	33.4%	31.3%	37.2%
CHEMICALS	55.3%	52.1%	50.0%	42.9%	48.2%	58.2%	54.8%	49.2%	52.0%	51.3%	45.3%	40.0%	49.9%
CONSTRUCTION	13.6%	13.1%	13.1%	12.7%	12.9%	14.3%	13.1%	11.5%	11.8%	11.9%	11.8%	12.3%	12.7%
CONSUMER GOODS	29.6%	29.0%	29.0%	27.7%	29.0%	33.4%	27.7%	20.9%	21.6%	20.2%	19.5%	19.5%	25.6%
ENERGY / UTILITIES	210.6%	202.1%	180.0%	149.4%	180.0%	214.6%	200.0%	181.5%	190.0%	180.8%	160.8%	142.0%	182.6%
FOOD AND BEVERAGE	30.5%	30.1%	30.0%	29.1%	30.7%	33.8%	32.0%	30.0%	30.7%	29.6%	27.9%	27.8%	30.2%
HITECH ELECTRONICS	22.4%	23.1%	23.8%	21.1%	21.2%	23.6%	20.3%	20.5%	21.1%	19.5%	18.2%	18.8%	21.1%
HITECH SEMICONDUCTORS	50.9%	61.8%	63.8%	51.9%	50.3%	54.8%	53.6%	43.7%	45.0%	45.4%	42.2%	41.8%	50.4%
INDUSTRIALS	29.2%	28.0%	27.1%	26.5%	29.3%	31.8%	27.8%	26.6%	28.4%	29.4%	27.1%	26.2%	28.1%
MATERIALS / MINING	77.4%	73.9%	71.1%	61.9%	65.2%	83.1%	75.5%	71.5%	80.4%	90.8%	87.5%	80.7%	76.6%
MEDICAL EQUIPMENT	29.2%	29.6%	29.4%	27.3%	26.8%	28.4%	25.8%	22.3%	22.0%	21.3%	21.5%	20.4%	25.3%
OIL AND GAS	81.6%	76.2%	67.9%	55.3%	77.0%	112.8%	82.8%	73.4%	87.9%	103.8%	87.9%	63.1%	80.8%
PHARMACEUTICALS	30.1%	29.7%	30.4%	27.4%	27.5%	31.2%	30.4%	27.8%	28.0%	27.6%	27.1%	26.5%	28.6%
RESTAURANTS	50.7%	50.9%	51.5%	53.7%	62.7%	71.4%	51.9%	36.6%	37.5%	36.9%	39.7%	42.9%	48.9%
RETAIL	27.5%	26.1%	25.7%	26.0%	27.1%	28.1%	23.5%	21.1%	20.6%	21.2%	20.9%	21.7%	24.1%
TELECOMMUNICATIONS	87.3%	86.8%	90.4%	86.7%	86.2%	89.2%	81.8%	70.9%	73.2%	73.3%	69.3%	68.8%	80.3%
TRANSPORTATION	83.2%	81.4%	85.3%	78.2%	93.6%	110.9%	88.8%	82.1%	83.6%	84.4%	78.8%	76.3%	85.5%
WHOLESALE DISTRIBUTION	5.1%	5.1%	5.2%	5.0%	5.6%	6.1%	5.7%	4.6%	4.6%	4.4%	4.3%	4.7%	5.0%
ALL INDUSTRIES	**51.6%**	**50.2%**	**49.1%**	**45.5%**	**50.8%**	**58.5%**	**52.5%**	**48.3%**	**51.4%**	**52.7%**	**49.6%**	**46.5%**	**50.5%**

Notes:
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NOTES & INSIGHTS

- There has been a general slight uptick in fixed asset intensity in the past ten years, which seems counter to the thesis that companies are moving to asset-light models or that digitization is replacing physical assets.
- In some industries, upticks in 2020 and 2021 followed by significant reductions can be caused by the pandemic whipsaw of revenue. Recent significant price increases in oil and gas have contributed to an overall decline the past 18 months.
- Additionally, companies started adopting accounting rule IFRS 16 in 2019. This rule requires that companies account for lease and "right-of-use" assets on their balance sheets. This gives a more accurate view of their use of assets. For some companies in some industries, this had a significant impact. For example, consumer goods asset intensity grew significantly from 2018 to 2019 due to this accounting rule change.

Industry Supply Chains

Asset intensity: physical assets / revenue – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	54.9%	55.5%	56.3%	56.7%	56.0%	61.2%	57.2%	50.3%	53.1%	48.3%	49.8%	45.8%	53.8%
AUTOMOTIVE	51.7%	48.3%	49.3%	51.0%	53.9%	59.5%	51.2%	48.6%	49.9%	47.7%	44.3%	42.0%	49.8%
CHEMICALS	73.7%	69.5%	67.7%	59.5%	64.3%	74.7%	70.8%	65.2%	68.4%	66.1%	59.1%	53.5%	66.0%
CONSTRUCTION	36.4%	35.2%	34.5%	34.1%	34.0%	37.3%	34.0%	32.9%	33.7%	34.5%	33.7%	33.3%	34.5%
CONSUMER GOODS	48.4%	46.9%	47.6%	46.9%	46.6%	51.9%	44.8%	37.3%	38.2%	36.0%	35.2%	35.1%	42.9%
ENERGY / UTILITIES	216.6%	208.1%	186.0%	154.9%	185.5%	220.7%	205.6%	186.8%	195.3%	185.8%	165.7%	146.8%	188.1%
FOOD AND BEVERAGE	45.6%	44.8%	44.8%	44.2%	45.0%	48.2%	45.8%	43.3%	44.0%	42.8%	40.7%	40.6%	44.2%
HITECH ELECTRONICS	35.7%	35.8%	36.9%	34.0%	32.8%	34.6%	30.1%	30.8%	31.3%	28.6%	27.1%	27.5%	32.1%
HITECH SEMICONDUCTORS	68.1%	81.2%	84.4%	69.1%	65.5%	70.6%	68.4%	58.1%	59.5%	59.5%	56.3%	55.3%	66.3%
INDUSTRIALS	46.7%	44.2%	43.8%	43.3%	45.6%	48.0%	43.0%	42.2%	44.4%	45.5%	43.0%	42.5%	44.3%
MATERIALS / MINING	95.0%	91.1%	88.9%	78.6%	81.3%	100.8%	92.0%	88.2%	97.4%	108.4%	103.8%	96.7%	93.5%
MEDICAL EQUIPMENT	45.8%	45.5%	46.2%	43.0%	41.1%	43.6%	39.4%	36.2%	35.7%	34.6%	35.5%	33.6%	40.0%
OIL AND GAS	89.1%	83.4%	75.1%	61.9%	84.6%	122.3%	90.2%	80.2%	96.0%	112.8%	95.1%	69.3%	88.3%
PHARMACEUTICALS	47.2%	45.8%	47.6%	42.4%	42.5%	47.7%	46.4%	42.7%	42.9%	42.1%	41.4%	40.3%	44.1%
RESTAURANTS	53.3%	53.3%	54.1%	56.6%	65.4%	74.2%	54.4%	39.0%	39.8%	39.3%	42.0%	45.2%	51.4%
RETAIL	37.1%	34.9%	34.9%	35.5%	36.2%	37.7%	33.4%	31.1%	30.8%	31.6%	31.2%	31.8%	33.8%
TELECOMMUNICATIONS	89.7%	89.0%	92.7%	89.1%	88.5%	91.5%	84.6%	73.3%	75.4%	75.5%	71.6%	70.9%	82.7%
TRANSPORTATION	87.6%	85.1%	89.1%	81.5%	97.4%	114.9%	92.1%	85.3%	87.3%	87.7%	82.1%	80.2%	89.2%
WHOLESALE DISTRIBUTION	14.5%	14.4%	14.6%	14.8%	15.6%	15.6%	15.2%	14.1%	13.9%	13.8%	13.5%	14.3%	14.5%
ALL INDUSTRIES	**64.0%**	**62.2%**	**61.3%**	**57.3%**	**62.5%**	**70.4%**	**62.8%**	**59.4%**	**62.9%**	**64.0%**	**60.5%**	**56.9%**	**61.8%**

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Industry Supply Chains

Asset intensity: CAPEX / revenue – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	3.8%	3.8%	3.7%	3.4%	3.1%	3.3%	4.2%	4.2%	4.5%	4.5%	4.6%	4.5%	4.0%
AUTOMOTIVE	7.6%	7.7%	7.4%	7.4%	7.8%	8.0%	8.1%	7.9%	8.3%	8.3%	8.0%	7.4%	7.8%
CHEMICALS	7.5%	7.5%	7.1%	5.8%	6.0%	7.0%	7.4%	6.7%	6.4%	7.4%	7.3%	7.0%	6.9%
CONSTRUCTION	3.1%	3.2%	2.8%	2.9%	2.8%	3.0%	2.6%	2.5%	2.5%	2.3%	2.4%	2.5%	2.7%
CONSUMER GOODS	4.3%	4.3%	4.9%	4.0%	3.6%	3.8%	4.2%	4.5%	4.3%	4.4%	4.5%	4.5%	4.3%
ENERGY / UTILITIES	24.3%	22.7%	19.2%	15.1%	17.4%	19.7%	18.8%	16.9%	17.2%	17.5%	16.4%	14.3%	18.3%
FOOD AND BEVERAGE	4.4%	4.7%	4.6%	4.3%	4.4%	4.4%	4.8%	4.8%	4.6%	4.5%	4.6%	4.7%	4.6%
HITECH ELECTRONICS	5.2%	5.4%	6.1%	5.4%	5.4%	5.1%	4.9%	5.6%	6.4%	5.7%	5.3%	5.0%	5.5%
HITECH SEMICONDUCTORS	15.8%	16.1%	18.1%	17.8%	16.5%	13.7%	15.1%	13.3%	12.5%	13.0%	11.3%	12.2%	14.6%
INDUSTRIALS	4.6%	4.6%	4.4%	4.3%	4.4%	4.4%	4.5%	4.4%	4.4%	4.8%	4.8%	4.6%	4.5%
MATERIALS / MINING	9.8%	9.8%	9.2%	7.9%	7.3%	8.2%	7.7%	7.1%	6.8%	8.0%	9.8%	9.8%	8.5%
MEDICAL EQUIPMENT	5.4%	5.6%	6.1%	6.0%	5.9%	5.7%	5.7%	5.3%	5.2%	4.9%	4.8%	4.7%	5.4%
OIL AND GAS	9.7%	9.2%	8.4%	6.1%	6.9%	9.9%	9.2%	8.7%	9.2%	11.4%	13.5%	11.9%	9.5%
PHARMACEUTICALS	7.0%	7.0%	7.1%	5.5%	5.4%	6.6%	6.0%	6.0%	5.9%	5.9%	5.9%	5.4%	6.1%
RESTAURANTS	5.3%	5.7%	5.6%	5.1%	5.2%	5.7%	6.0%	6.2%	5.4%	5.4%	5.5%	6.2%	5.6%
RETAIL	4.6%	4.0%	3.5%	3.8%	3.7%	3.6%	3.2%	3.1%	3.1%	3.0%	3.1%	3.1%	3.5%
TELECOMMUNICATIONS	15.7%	15.8%	16.8%	18.0%	20.6%	16.4%	15.8%	16.0%	16.9%	17.3%	18.3%	17.2%	17.1%
TRANSPORTATION	8.5%	8.9%	9.2%	8.2%	8.0%	9.8%	9.8%	10.6%	10.3%	10.5%	10.9%	9.9%	9.6%
WHOLESALE DISTRIBUTION	0.7%	0.7%	0.7%	0.6%	0.6%	0.7%	0.8%	0.9%	0.9%	0.8%	0.8%	0.9%	0.7%
ALL INDUSTRIES	**7.5%**	**7.4%**	**7.2%**	**6.5%**	**6.8%**	**7.1%**	**7.1%**	**7.0%**	**7.2%**	**7.6%**	**8.0%**	**7.8%**	**7.3%**

NOTES & INSIGHTS

- CAPEX is another way of looking at the asset intensity of industry. The thinking is that the higher the CAPEX, the higher the asset intensity.
- Average aggregate CAPEX / revenue across all industries held steady across the decade but has seen some year-to-year fluctuations, largely due to changes in the oil and gas and energy and utilities industries. These industries are highly sensitive to the price of oil and other inputs, thus the numerator in those industries can change rapidly.

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Industry Supply Chains

Return on invested capital (ROIC) – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	10.1%	9.5%	9.4%	8.7%	8.4%	4.7%	10.6%	12.0%	10.7%	11.5%	9.8%	8.8%	9.5%
AUTOMOTIVE	4.9%	6.7%	7.2%	7.0%	5.4%	3.6%	7.0%	6.0%	8.0%	7.9%	6.8%	8.0%	6.7%
CHEMICALS	6.1%	6.6%	7.3%	11.5%	9.9%	5.8%	7.3%	7.8%	9.4%	11.3%	10.6%	10.6%	8.9%
CONSTRUCTION	8.2%	8.7%	9.1%	9.8%	9.2%	7.2%	8.3%	7.6%	9.3%	9.1%	8.2%	7.7%	8.6%
CONSUMER GOODS	14.2%	15.9%	16.0%	16.0%	16.1%	12.6%	16.7%	17.1%	15.7%	17.6%	18.3%	18.4%	16.4%
ENERGY / UTILITIES	5.3%	5.7%	4.9%	3.5%	3.6%	4.6%	4.6%	4.5%	5.0%	6.0%	5.4%	5.3%	4.8%
FOOD AND BEVERAGE	10.0%	10.4%	10.1%	10.0%	10.2%	9.6%	9.6%	9.5%	9.6%	10.5%	11.3%	13.2%	10.4%
HITECH ELECTRONICS	16.0%	15.6%	14.2%	17.1%	18.1%	14.9%	17.6%	16.1%	14.5%	15.0%	19.2%	19.2%	16.5%
HITECH SEMICONDUCTORS	22.4%	13.9%	13.4%	19.2%	18.8%	15.2%	14.9%	19.5%	16.3%	13.1%	16.4%	19.7%	16.4%
INDUSTRIALS	7.3%	7.7%	7.9%	7.5%	6.6%	6.1%	7.6%	7.6%	7.9%	7.4%	8.1%	8.3%	7.5%
MATERIALS / MINING	8.6%	8.9%	9.2%	14.0%	16.5%	8.7%	6.3%	8.6%	7.7%	4.7%	3.7%	6.9%	8.7%
MEDICAL EQUIPMENT	7.9%	7.5%	7.0%	8.2%	9.3%	8.0%	8.0%	7.8%	7.6%	8.4%	7.9%	11.4%	8.3%
OIL AND GAS	8.1%	8.8%	11.6%	18.0%	9.2%	1.1%	6.0%	5.7%	5.2%	2.3%	2.8%	7.4%	7.1%
PHARMACEUTICALS	14.3%	13.2%	10.8%	14.8%	13.9%	11.7%	11.2%	13.3%	13.6%	14.0%	14.1%	16.7%	13.4%
RESTAURANTS	14.2%	14.7%	14.4%	13.0%	10.8%	7.1%	13.9%	17.0%	16.5%	15.7%	13.9%	14.8%	13.8%
RETAIL	11.3%	12.4%	10.8%	10.0%	9.0%	10.1%	9.8%	10.6%	11.3%	12.1%	12.2%	13.4%	11.1%
TELECOMMUNICATIONS	7.2%	7.3%	6.7%	6.3%	6.2%	6.2%	7.2%	6.6%	7.2%	7.2%	8.4%	8.5%	7.1%
TRANSPORTATION	7.6%	8.1%	7.2%	9.3%	4.6%	0.7%	7.7%	7.8%	7.8%	8.9%	10.0%	9.7%	7.4%
WHOLESALE DISTRIBUTION	11.6%	12.1%	12.6%	12.4%	10.9%	9.0%	10.8%	10.2%	10.0%	11.2%	11.2%	11.9%	11.1%
ALL INDUSTRIES	**8.8%**	**9.1%**	**9.0%**	**10.5%**	**8.9%**	**6.4%**	**8.0%**	**8.2%**	**8.4%**	**8.0%**	**8.1%**	**9.5%**	**8.6%**

NOTES & INSIGHTS

- Return on invested capital is a measure of how well a company is delivering return on the debt and equity invested in a business.
- This chart shows the aggregate ROIC for each industry across the time horizon.
- For the time horizon shown, ROIC has been reasonably consistent, with some yearly fluctuations (for example, the pandemic) and more recently with a surge in Semiconductors due to AI.
- For the definition of the ROIC metric, see "Notes and Definitions" in the Appendix.

Notes:

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4. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains
Return on capital employed (ROCE – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	8.4%	7.4%	6.9%	6.3%	6.3%	3.2%	7.0%	8.7%	7.0%	7.9%	7.1%	6.5%	6.8%
AUTOMOTIVE	5.8%	7.2%	7.7%	7.3%	5.9%	3.9%	6.4%	7.4%	7.9%	8.4%	8.2%	8.0%	7.1%
CHEMICALS	7.3%	7.4%	8.1%	12.6%	10.9%	6.1%	7.7%	8.4%	9.4%	10.9%	11.1%	11.2%	9.4%
CONSTRUCTION	9.8%	9.6%	9.8%	10.7%	9.8%	7.5%	9.2%	9.9%	9.3%	9.1%	8.3%	7.7%	9.2%
CONSUMER GOODS	16.0%	16.1%	15.9%	15.9%	15.6%	11.7%	16.0%	16.4%	14.9%	16.1%	16.8%	17.3%	15.7%
ENERGY / UTILITIES	5.8%	5.9%	5.0%	3.6%	3.7%	4.4%	4.8%	5.1%	5.1%	5.5%	5.0%	5.1%	4.8%
FOOD AND BEVERAGE	11.7%	11.9%	11.7%	11.7%	11.6%	10.4%	11.3%	11.4%	11.1%	11.9%	12.8%	14.0%	11.8%
HITECH ELECTRONICS	16.2%	14.6%	13.2%	16.2%	15.8%	11.6%	11.8%	14.0%	12.5%	12.0%	13.6%	13.5%	13.5%
HITECH SEMICONDUCTORS	23.1%	13.4%	13.0%	18.4%	17.6%	13.8%	14.8%	19.1%	14.3%	12.1%	14.5%	15.8%	15.2%
INDUSTRIALS	8.6%	8.7%	8.9%	8.6%	7.6%	6.4%	8.4%	8.6%	6.8%	6.5%	7.3%	7.3%	7.7%
MATERIALS / MINING	10.3%	9.9%	10.1%	15.5%	18.4%	9.7%	9.0%	10.8%	9.4%	6.2%	4.8%	8.0%	10.2%
MEDICAL EQUIPMENT	9.4%	8.6%	8.1%	9.5%	10.4%	8.2%	8.8%	8.8%	8.5%	9.1%	8.8%	11.1%	9.1%
OIL AND GAS	9.8%	10.1%	12.8%	20.0%	10.3%	1.2%	6.7%	8.6%	5.5%	2.6%	3.2%	8.7%	8.2%
PHARMACEUTICALS	15.6%	13.5%	11.0%	14.9%	13.9%	10.5%	11.0%	12.5%	12.9%	13.0%	13.2%	14.4%	12.8%
RESTAURANTS	15.5%	15.8%	15.5%	13.5%	10.9%	7.3%	14.9%	17.5%	18.2%	18.4%	16.2%	15.2%	14.8%
RETAIL	12.8%	12.8%	11.3%	10.6%	9.3%	9.8%	10.9%	11.7%	12.7%	13.4%	13.3%	14.1%	11.8%
TELECOMMUNICATIONS	8.0%	7.8%	7.2%	7.3%	7.1%	6.8%	7.7%	8.0%	8.2%	8.1%	8.7%	8.7%	7.8%
TRANSPORTATION	8.3%	8.5%	7.4%	9.5%	4.9%	0.8%	7.8%	8.2%	8.7%	9.2%	10.2%	8.8%	7.6%
WHOLESALE DISTRIBUTION	14.4%	14.8%	15.1%	15.2%	12.9%	10.5%	13.1%	13.7%	13.0%	13.9%	14.6%	14.1%	13.7%
ALL INDUSTRIES	**10.1%**	**9.7%**	**9.6%**	**11.3%**	**9.5%**	**6.5%**	**8.5%**	**9.4%**	**8.6%**	**8.1%**	**8.3%**	**9.4%**	**9.0%**

NOTES & INSIGHTS

- Return on capital employed is a measure of how well a company is delivering return on the long-term capital employed in the business.
- This chart shows the aggregate ROCE for each industry across the time horizon.
- For the time horizon shown, ROIC has been reasonably consistent, with some yearly fluctuations (for example, the pandemic) and more recently with a surge in Semiconductors due to AI.
- For the definition of the ROCE metric, see “Notes and Definitions” in the Appendix.

Notes:
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4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

Economic profit (EP) – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	1.6%	1.1%	-0.8%	2.0%	2.5%	-2.5%	0.4%	2.1%	1.1%	1.1%	0.8%	0.1%	0.7%
AUTOMOTIVE	-3.8%	-1.8%	-2.5%	0.9%	-0.3%	-3.6%	-1.3%	-2.0%	-0.2%	-0.8%	-1.2%	-0.5%	-1.2%
CHEMICALS	-1.4%	-0.8%	-2.2%	5.3%	5.0%	-1.7%	-2.0%	-1.2%	0.4%	1.6%	1.7%	1.3%	0.7%
CONSTRUCTION	-0.6%	0.3%	-0.5%	2.2%	2.2%	0.5%	0.2%	-0.1%	0.9%	0.4%	0.1%	0.3%	0.6%
CONSUMER GOODS	4.8%	6.9%	4.9%	8.0%	8.8%	6.1%	7.0%	7.4%	7.1%	7.2%	7.8%	7.6%	7.2%
ENERGY / UTILITIES	-2.9%	-1.1%	-6.5%	-2.0%	0.3%	-2.8%	-5.7%	-4.1%	-3.1%	-2.3%	-2.7%	-0.9%	-2.8%
FOOD AND BEVERAGE	3.1%	3.1%	-0.2%	5.0%	6.6%	3.6%	2.0%	3.5%	3.1%	2.4%	3.6%	4.3%	3.4%
HITECH ELECTRONICS	5.6%	5.0%	2.4%	6.7%	7.7%	4.6%	4.1%	5.3%	4.4%	3.6%	4.9%	4.8%	4.9%
HITECH SEMICONDUCTORS	17.8%	9.1%	4.1%	16.0%	15.9%	9.9%	7.9%	12.6%	9.7%	5.4%	8.6%	9.7%	9.9%
INDUSTRIALS	-0.3%	0.5%	-0.6%	2.5%	2.1%	-0.6%	-0.6%	0.1%	0.2%	-0.8%	0.3%	0.0%	0.3%
MATERIALS / MINING	-0.2%	0.8%	-1.0%	7.2%	10.5%	1.5%	-3.4%	-0.2%	-0.6%	-5.1%	-5.8%	-2.3%	0.1%
MEDICAL EQUIPMENT	1.8%	0.5%	-5.2%	5.0%	8.2%	2.4%	0.1%	2.2%	1.2%	0.5%	1.1%	3.9%	1.8%
OIL AND GAS	1.1%	1.8%	1.9%	8.1%	4.1%	-9.1%	-3.4%	-3.1%	-4.4%	-9.6%	-6.4%	-1.0%	-1.9%
PHARMACEUTICALS	10.1%	7.9%	0.7%	12.7%	13.3%	7.3%	4.7%	8.6%	8.5%	7.5%	8.5%	9.8%	8.2%
RESTAURANTS	4.6%	5.0%	3.1%	5.0%	4.4%	1.2%	4.9%	6.3%	6.4%	5.5%	4.7%	5.5%	4.7%
RETAIL	1.9%	2.1%	0.2%	2.1%	2.2%	1.5%	0.8%	1.6%	1.6%	1.4%	1.6%	1.8%	1.5%
TELECOMMUNICATIONS	-0.1%	0.6%	-3.1%	3.1%	5.1%	-1.1%	-2.5%	-2.0%	-0.9%	-2.1%	0.2%	0.3%	-0.2%
TRANSPORTATION	-0.2%	0.5%	-1.5%	3.9%	0.0%	-6.4%	0.0%	0.9%	0.9%	1.3%	2.4%	1.8%	0.4%
WHOLESALE DISTRIBUTION	0.8%	0.9%	0.7%	1.2%	1.3%	0.8%	0.7%	0.9%	0.8%	1.0%	1.0%	1.0%	0.9%
ALL INDUSTRIES	**1.4%**	**1.7%**	**-0.3%**	**4.5%**	**4.3%**	**-0.4%**	**-0.3%**	**0.6%**	**0.6%**	**-0.5%**	**0.2%**	**1.1%**	**1.1%**

NOTES & INSIGHTS

- Economic profit is a metric that shows whether a company is delivering a return that is above its cost of capital (sometimes called the hurdle rate).
- This chart shows the aggregate EP for each industry across the time horizon.
- As shown, at an aggregate level certain industries consistently do not return above the cost of capital for that industry.
- For the definition of the EP metric, see “Notes and Definitions” in the Appendix.

Notes:

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Industry Supply Chains
Return on operating assets (ROOA) – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	5.4%	5.0%	5.1%	4.6%	4.5%	2.4%	5.3%	6.2%	5.3%	5.9%	6.0%	6.7%	5.2%
AUTOMOTIVE	5.2%	6.8%	7.1%	6.9%	5.5%	3.6%	6.4%	5.8%	6.6%	6.4%	6.2%	6.0%	6.0%
CHEMICALS	5.4%	5.9%	6.4%	10.0%	8.5%	5.0%	6.0%	7.2%	7.7%	9.1%	8.6%	8.2%	7.4%
CONSTRUCTION	6.1%	6.2%	6.7%	7.5%	6.8%	5.3%	6.0%	5.4%	5.9%	5.4%	4.9%	4.5%	5.8%
CONSUMER GOODS	11.8%	13.1%	12.9%	12.7%	12.5%	9.8%	13.4%	12.8%	12.2%	13.2%	13.9%	13.9%	12.8%
ENERGY / UTILITIES	4.7%	5.1%	4.4%	3.1%	3.1%	3.8%	3.8%	3.8%	4.1%	4.8%	4.2%	4.2%	4.1%
FOOD AND BEVERAGE	8.6%	8.9%	8.7%	8.5%	8.7%	8.2%	8.4%	8.2%	8.1%	8.6%	9.1%	10.4%	8.8%
HITECH ELECTRONICS	13.7%	13.2%	12.2%	14.4%	15.1%	11.6%	11.8%	13.3%	12.3%	12.8%	14.7%	13.6%	13.2%
HITECH SEMICONDUCTORS	20.3%	12.3%	12.0%	16.8%	16.0%	12.9%	12.8%	16.7%	13.7%	11.8%	15.2%	17.3%	14.7%
INDUSTRIALS	8.2%	8.6%	8.8%	8.2%	7.2%	6.4%	8.1%	7.7%	7.7%	7.2%	7.9%	7.5%	7.7%
MATERIALS / MINING	7.9%	8.1%	8.3%	12.5%	14.5%	7.7%	5.6%	7.8%	6.7%	4.2%	3.4%	6.1%	7.6%
MEDICAL EQUIPMENT	7.3%	6.9%	6.4%	7.4%	8.2%	6.9%	7.7%	6.6%	6.5%	7.1%	6.7%	9.5%	7.5%
OIL AND GAS	7.1%	7.7%	10.1%	15.5%	8.0%	1.0%	5.3%	5.1%	4.6%	2.0%	2.5%	6.3%	6.3%
PHARMACEUTICALS	11.9%	10.9%	8.8%	12.0%	11.0%	8.9%	8.9%	10.1%	10.4%	10.8%	11.1%	13.1%	10.8%
RESTAURANTS	12.7%	13.3%	12.9%	11.6%	9.4%	6.1%	11.5%	13.2%	13.4%	13.1%	11.8%	12.6%	12.1%
RETAIL	9.6%	10.2%	8.7%	8.1%	7.3%	7.9%	7.6%	8.1%	8.4%	8.7%	8.6%	9.6%	8.7%
TELECOMMUNICATIONS	6.7%	6.6%	6.1%	5.8%	5.8%	5.5%	7.2%	5.7%	6.0%	5.8%	6.6%	6.6%	6.4%
TRANSPORTATION	6.3%	6.7%	6.0%	7.9%	3.8%	0.6%	6.1%	6.3%	6.2%	6.7%	7.5%	7.0%	5.9%
WHOLESALE DISTRIBUTION	6.2%	6.5%	6.8%	6.6%	6.0%	5.1%	6.5%	5.9%	5.9%	6.4%	6.5%	6.6%	6.3%
ALL INDUSTRIES	**7.9%**	**8.0%**	**7.9%**	**9.2%**	**7.8%**	**5.5%**	**6.9%**	**7.0%**	**6.9%**	**6.5%**	**6.7%**	**7.6%**	**7.3%**

NOTES & INSIGHTS

- Operating assets are the assets needed to drive operations in a manufacturing, distribution, retail, transportation or other company engaged in supply chains.
- ROOA is a metric that shows how well a company is using these operating assets and can be useful in evaluating supply chain operations of a company and an industry.
- This chart shows the aggregate ROOA for each industry across the time horizon.
- For the definition of the ROOA metric, see “Notes and Definitions” in the Appendix.

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Industry Supply Chains

Revenue per employee ($K) – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	$417.3	$392.7	$357.6	$361.1	$369.6	$342.1	$368.1	$357.3	$362.7	$365.4	$346.1	$360.7	$366.7
AUTOMOTIVE	$416.1	$411.1	$412.8	$387.2	$378.6	$340.7	$367.7	$380.5	$367.1	$353.9	$362.6	$389.6	$380.7
CHEMICALS	$527.7	$533.5	$557.0	$647.2	$571.0	$485.3	$507.4	$503.5	$518.2	$471.0	$515.6	$604.6	$536.8
CONSTRUCTION	$396.7	$388.2	$398.2	$378.8	$387.0	$351.4	$387.6	$383.6	$377.1	$341.4	$351.5	$363.9	$375.4
CONSUMER GOODS	$331.3	$330.2	$331.5	$314.2	$303.9	$275.9	$270.8	$265.8	$254.2	$248.1	$254.8	$266.6	$287.3
ENERGY / UTILITIES	$890.2	$870.6	$944.6	$1,125.3	$919.0	$731.4	$743.0	$793.3	$733.7	$727.1	$737.8	$864.1	$840.0
FOOD AND BEVERAGE	$343.6	$336.6	$338.8	$334.0	$326.1	$291.1	$305.8	$289.7	$293.7	$273.1	$270.3	$283.8	$307.2
HITECH ELECTRONICS	$475.8	$437.7	$413.2	$425.7	$407.8	$351.9	$355.5	$366.0	$343.5	$273.8	$295.5	$338.6	$373.7
HITECH SEMICONDUCTORS	$721.1	$551.4	$504.0	$562.5	$526.0	$429.4	$415.6	$435.2	$404.3	$363.6	$356.3	$364.4	$469.5
INDUSTRIALS	$348.1	$344.9	$351.3	$350.3	$327.4	$308.6	$303.2	$294.3	$275.6	$262.2	$285.5	$305.4	$313.1
MATERIALS / MINING	$499.0	$497.3	$514.5	$570.1	$538.7	$411.5	$441.6	$435.5	$416.2	$350.3	$355.7	$437.0	$455.6
MEDICAL EQUIPMENT	$274.6	$262.4	$252.4	$248.0	$252.8	$233.4	$234.9	$229.5	$230.5	$223.4	$211.7	$231.0	$240.4
OIL AND GAS	$1,564.3	$1,593.6	$1,676.4	$1,964.3	$1,441.3	$946.8	$1,312.1	$1,363.0	$1,109.6	$926.0	$1,086.6	$1,425.1	$1,367.4
PHARMACEUTICALS	$600.8	$572.6	$541.0	$562.4	$569.5	$474.3	$464.2	$470.6	$458.7	$448.5	$439.0	$472.0	$506.1
RESTAURANTS	$89.1	$85.3	$79.5	$78.1	$70.8	$63.6	$68.5	$68.3	$65.6	$62.7	$51.8	$57.5	$70.1
RETAIL	$356.2	$335.0	$326.1	$306.0	$281.6	$276.3	$266.1	$251.8	$245.9	$243.1	$247.9	$254.5	$282.6
TELECOMMUNICATIONS	$526.4	$515.9	$503.0	$508.6	$500.9	$470.4	$474.2	$464.4	$453.7	$450.3	$443.4	$452.0	$480.3
TRANSPORTATION	$279.7	$267.4	$250.3	$279.5	$238.5	$205.0	$256.6	$252.7	$231.7	$228.2	$246.0	$267.9	$250.3
WHOLESALE DISTRIBUTION	$1,415.3	$1,327.2	$1,242.1	$1,183.2	$1,107.7	$843.6	$853.2	$841.0	$891.0	$892.4	$968.5	$1,034.4	$1,050.0
ALL INDUSTRIES	**$454.5**	**$440.1**	**$438.8**	**$453.6**	**$410.7**	**$358.2**	**$380.5**	**$382.0**	**$362.6**	**$338.6**	**$355.0**	**$403.0**	**$393.0**

NOTES & INSIGHTS

- Revenue per employee was relatively flat across much of the past decade leading up to the pandemic. It dipped during the pandemic but then rose significantly, largely driven by inflation across multiple industries.
- Revenue per employee does not account for offshoring of labor to low-cost countries, which would increase headcount and lower the cost per head.
- For the past decade, most productivity has been accruing to customers in the form of greater choice in product and services, which do not necessarily show up in revenue numbers and therefore do not show up in productivity numbers.

Notes:

1. This is an aggregate view calculated as follows: the sum of all revenue for all companies in an industry divided by the sum of all employees for all companies in an industry. The average at the bottom is the average across all industries, not the aggregate average.
2. "All Industries" is the aggregate value for all industries (not the average of the percentages for each industry).
3. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Industry Supply Chains

Market cap / revenue – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	2.7	2.0	2.2	1.9	1.6	1.6	1.3	1.5	1.2	1.4	1.2	1.1	1.6
AUTOMOTIVE	0.9	0.8	0.9	0.8	0.7	1.3	0.8	0.5	0.5	0.7	0.6	0.6	0.8
CHEMICALS	1.4	1.4	1.4	1.3	1.3	2.1	1.7	1.4	1.3	1.6	1.2	1.0	1.4
CONSTRUCTION	0.8	0.7	0.7	0.7	0.5	0.7	0.6	0.6	0.5	0.7	0.5	0.5	0.6
CONSUMER GOODS	2.2	2.2	2.2	2.5	2.5	3.6	3.1	2.7	2.3	2.6	2.2	2.0	2.5
ENERGY / UTILITIES	1.6	1.3	1.2	1.1	1.2	1.7	1.6	1.5	1.3	1.3	1.1	0.9	1.3
FOOD AND BEVERAGE	1.6	1.5	1.5	1.8	2.0	2.3	2.1	2.2	1.9	2.5	2.2	2.0	2.0
HITECH ELECTRONICS	3.2	2.9	2.9	2.3	1.9	3.1	2.5	1.8	1.4	1.9	1.3	1.2	2.2
HITECH SEMICONDUCTORS	12.8	11.8	13.0	7.5	4.8	9.6	7.3	4.7	3.5	5.0	3.6	2.8	7.2
INDUSTRIALS	1.6	1.3	1.3	1.3	1.1	1.5	1.3	1.2	1.1	1.4	1.0	0.9	1.3
MATERIALS / MINING	1.5	1.0	1.0	1.0	1.0	1.3	1.2	1.0	0.9	1.3	1.0	0.6	1.1
MEDICAL EQUIPMENT	4.1	4.0	4.2	4.2	4.1	7.0	5.8	4.8	4.0	4.0	3.2	3.1	4.4
OIL AND GAS	0.9	0.8	0.8	0.7	0.9	1.0	0.5	0.8	1.1	3.6	3.4	2.8	1.4
PHARMACEUTICALS	4.2	3.7	4.0	3.9	4.1	4.8	4.6	4.3	3.8	4.1	3.6	4.0	4.1
RESTAURANTS	2.2	2.5	2.7	2.9	3.0	3.9	3.1	3.0	2.5	2.6	2.3	2.4	2.8
RETAIL	1.4	1.3	1.4	1.2	1.0	1.6	1.7	1.3	1.0	1.1	0.9	0.9	1.2
TELECOMMUNICATIONS	1.4	1.3	1.3	1.2	1.2	1.4	1.5	1.6	1.2	1.5	1.4	1.3	1.4
TRANSPORTATION	1.0	1.0	1.0	1.2	1.1	1.7	1.1	1.1	1.1	1.5	1.1	1.0	1.2
WHOLESALE DISTRIBUTION	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.3	0.4	0.4
ALL INDUSTRIES	**1.8**	**1.6**	**1.6**	**1.4**	**1.3**	**1.9**	**1.5**	**1.3**	**1.2**	**1.6**	**1.4**	**1.3**	**1.4**

NOTES & INSIGHTS

- The pandemic years saw market cap multiples rising in most industries. This is particularly true in consumer goods, hitech, and medical equipment.
- The aggregate multiple across all industries is currently significantly above its ten-year average.

Notes:

1. This is an aggregate view: industry-level asset market cap / revenue = aggregate market capitalization divided by aggregate revenue for each industry. Market cap is as of the last day of each year. TTM market cap is as of the day on the cover of this report.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
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4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

Market cap / EBITDA – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	24.0	16.6	18.5	16.5	13.3	17.0	11.2	11.2	10.5	11.0	9.1	8.4	13.9
AUTOMOTIVE	7.6	6.9	6.7	6.0	4.8	10.1	6.3	3.7	3.4	4.5	3.9	4.1	5.7
CHEMICALS	8.9	9.1	8.7	6.9	6.8	12.6	9.5	7.4	6.3	7.9	6.5	5.8	8.0
CONSTRUCTION	8.8	6.8	7.4	6.6	5.3	7.8	6.0	5.8	5.8	7.8	6.5	6.3	6.7
CONSUMER GOODS	11.5	11.3	11.5	12.6	11.7	18.9	15.0	13.7	11.8	13.3	11.1	10.3	12.7
ENERGY / UTILITIES	6.0	4.8	5.4	6.2	6.2	6.5	6.3	6.1	5.2	5.2	4.6	4.0	5.5
FOOD AND BEVERAGE	9.6	8.7	8.9	10.2	10.9	11.9	10.7	10.8	9.4	12.6	11.4	10.6	10.5
HITECH ELECTRONICS	18.3	15.2	18.2	13.0	9.9	18.6	15.6	9.4	6.7	9.6	6.4	6.3	12.3
HITECH SEMICONDUCTORS	29.8	20.7	37.3	18.7	12.3	26.2	19.4	12.0	9.8	15.7	11.0	8.7	18.5
INDUSTRIALS	11.3	8.8	9.0	8.7	7.5	10.6	8.3	7.1	6.6	9.2	6.8	6.0	8.3
MATERIALS / MINING	7.8	5.1	5.3	4.5	3.6	6.2	6.5	4.8	4.6	7.5	6.6	3.3	5.5
MEDICAL EQUIPMENT	18.2	16.8	18.6	16.8	15.5	27.8	23.6	19.7	16.7	15.7	13.0	13.6	18.0
OIL AND GAS	4.6	4.1	3.8	2.9	4.6	7.1	3.1	4.1	6.4	21.7	22.0	17.7	8.5
PHARMACEUTICALS	12.9	10.9	13.8	11.6	11.8	15.0	14.5	13.4	11.7	12.2	10.9	12.2	12.6
RESTAURANTS	12.0	12.9	14.0	14.7	14.6	21.8	15.0	14.4	12.1	12.7	11.4	11.6	13.9
RETAIL	14.5	12.9	15.2	13.0	12.1	18.6	20.4	15.2	12.5	13.4	10.9	10.8	14.1
TELECOMMUNICATIONS	4.0	3.5	3.7	3.5	3.5	4.0	4.3	4.9	3.8	4.6	4.3	4.1	4.0
TRANSPORTATION	6.0	5.7	6.0	6.4	7.2	14.8	6.3	6.0	6.1	7.9	5.6	5.8	7.0
WHOLESALE DISTRIBUTION	10.7	9.1	9.5	9.3	8.6	12.0	8.5	8.3	7.5	8.8	8.4	8.0	9.1
ALL INDUSTRIES	**10.7**	**8.8**	**9.5**	**7.9**	**7.7**	**12.0**	**9.4**	**7.9**	**7.2**	**10.2**	**9.1**	**8.6**	**8.9**

NOTES & INSIGHTS

- The market cap multiple of EBITDA has been relatively stable but has seen a recent significant rise.

Notes:

1. This is an aggregate view: industry-level asset market cap / revenue = aggregate market capitalization divided by aggregate EBITDA for each industry. Market cap is as of the last day of each year. TTM market cap is as of the day on the cover of this report.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
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4. For definition of all metrics and information related to metrics, see “Notes and Definitions” in the Appendix.

Industry Supply Chains

Market cap / net income – ten-year history

INDUSTRY	TTM	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Average
AEROSPACE AND DEFENSE	49.3	40.7	32.3	47.9	34.7	169.7	33.7	48.3	25.3	26.9	31.3	18.3	46.5
AUTOMOTIVE	26.4	17.3	15.0	13.1	10.3	49.3	20.0	8.3	8.3	11.5	9.9	9.6	16.6
CHEMICALS	43.3	35.6	26.1	14.5	14.1	63.3	30.4	17.4	14.4	19.8	15.4	14.2	25.7
CONSTRUCTION	15.4	12.8	13.6	11.9	10.6	15.8	11.6	11.2	11.1	16.3	14.1	12.7	13.1
CONSUMER GOODS	24.9	23.6	22.6	23.9	22.1	47.7	35.9	26.6	21.0	23.9	21.2	18.4	26.0
ENERGY / UTILITIES	17.9	13.3	18.5	25.1	20.1	24.3	21.6	19.5	15.8	16.7	21.1	15.8	19.1
FOOD AND BEVERAGE	22.2	17.7	20.8	20.2	20.2	29.1	22.6	22.0	14.3	24.2	22.6	20.3	21.3
HITECH ELECTRONICS	32.7	32.4	34.5	21.1	16.4	37.9	31.2	19.5	15.0	19.9	13.4	12.5	23.9
HITECH SEMICONDUCTORS	46.0	67.8	66.7	29.7	20.7	47.9	37.7	21.1	20.5	36.2	21.2	17.5	36.1
INDUSTRIALS	22.7	17.9	17.9	16.3	15.1	28.3	17.1	13.7	13.0	22.0	15.2	12.2	17.6
MATERIALS / MINING	20.7	14.8	13.7	8.4	6.7	21.3	20.4	11.1	12.0	38.2	-24.1	16.2	13.3
MEDICAL EQUIPMENT	41.8	43.7	44.7	44.9	28.3	59.0	49.8	47.8	42.8	35.4	34.4	32.9	42.1
OIL AND GAS	13.9	11.7	8.5	6.3	13.1	-11.9	13.3	12.2	21.6	600.4	-135.0	66.4	51.7
PHARMACEUTICALS	27.2	34.7	37.2	23.1	20.7	42.3	29.2	26.2	34.7	26.7	20.5	23.1	28.8
RESTAURANTS	27.4	28.3	27.5	35.1	31.1	83.6	30.8	25.7	24.5	27.0	26.0	31.6	33.2
RETAIL	26.9	27.3	33.7	30.7	26.9	42.7	51.2	36.5	29.3	29.7	28.0	25.1	32.3
TELECOMMUNICATIONS	12.5	13.5	16.9	21.5	9.4	22.8	18.6	17.7	10.2	20.6	16.6	14.2	16.2
TRANSPORTATION	13.6	13.1	12.6	11.8	18.9	-54.0	17.7	15.1	12.8	21.7	13.7	17.6	9.6
WHOLESALE DISTRIBUTION	25.3	21.9	19.3	19.2	24.1	85.5	21.5	20.3	14.2	18.8	22.1	17.5	25.8
ALL INDUSTRIES	**25.1**	**22.7**	**22.5**	**17.3**	**16.5**	**50.9**	**25.7**	**19.0**	**17.0**	**29.2**	**30.2**	**22.6**	**24.9**

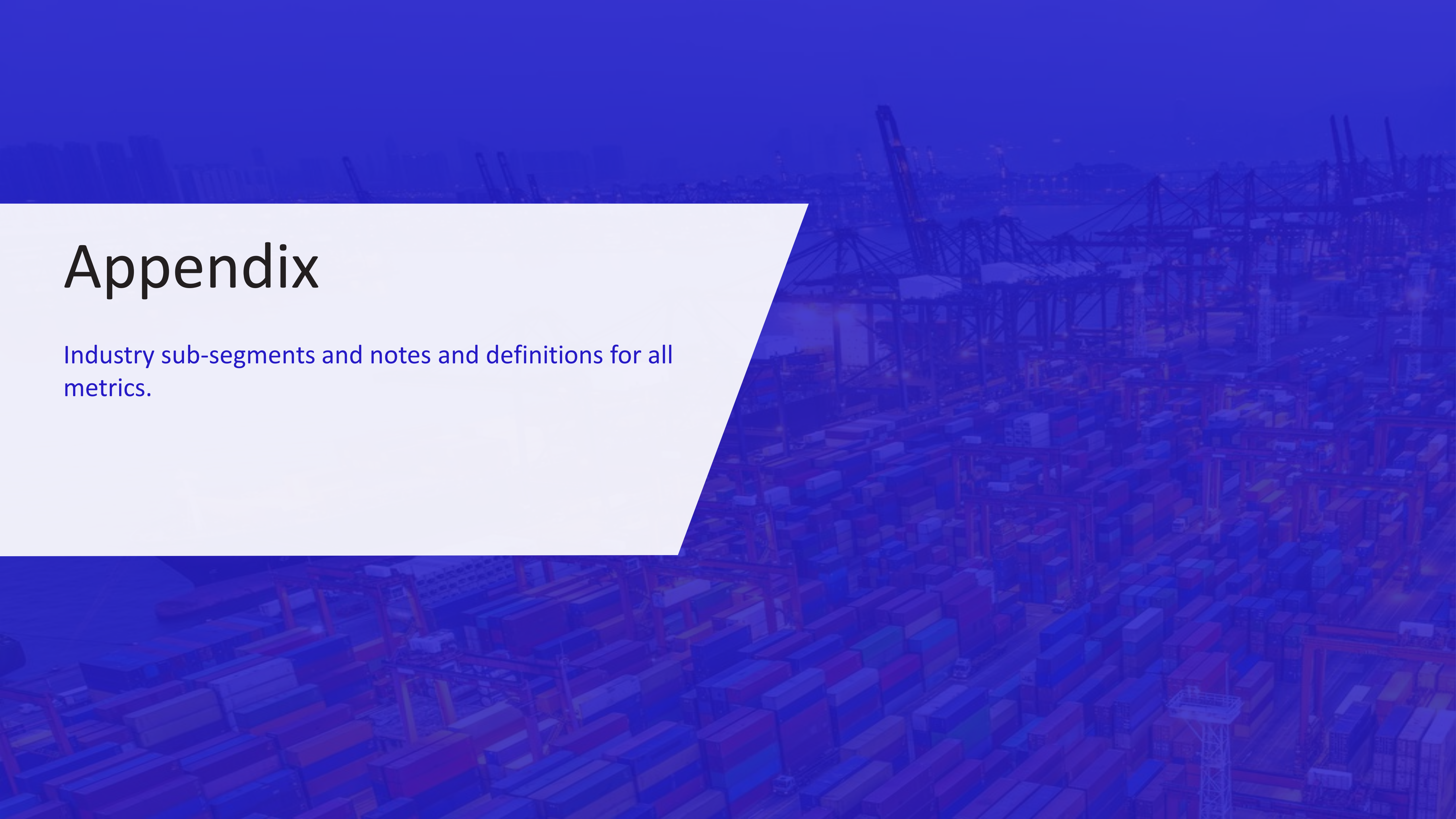
NOTES & INSIGHTS

- This measure represents the aggregate price / earnings multiple of each industry. It's calculated as aggregate market cap divided by aggregate net profit for each industry.
- Aggregate price / earnings multiples for all industries have averaged around 20 for the past decade (not including the pandemic year in which there was a deep profit recession). Multiples in some industries were negative in some years due to aggregate net income in those industries being negative.

Notes:
1. This is an aggregate view: industry-level asset market cap / revenue = aggregate market capitalization divided by aggregate net income for each industry. Market cap is as of the last day of each year. TTM market cap is as of the day on the cover of this report.
2. Average = average of the averages. TTM = trailing twelve months as of the date on the cover of this report.
3. "All Industries" is the aggregate value for all industries (not the average of the percentages for each industry).
4. For definition of all metrics and information related to metrics, see "Notes and Definitions" in the Appendix.

Appendix

Industry sub-segments and notes and definitions for all metrics.



Appendix
Industry segments

Aerospace and Defense
- Aerospace and Defense

Automotive
- Auto Manufacturers
- Auto Parts
- Recreational Vehicles

Chemicals
- Chemicals
- Specialty Chemicals

Construction
- Engineering & Construction
- Residential Construction

Consumer Goods
- Apparel Manufacturing
- Footwear & Accessories
- Furnishings, Fixtures & Appliances
- Household & Personal Products
- Luxury Goods
- Leisure

Energy / Utilities
- Utilities - Diversified
- Utilities - Independent Power Producers
- Utilities - Regulated Electric
- Utilities - Regulated Gas
- Utilities - Regulated Water
- Utilities - Renewable

Food and Beverage
- Beverages - Brewers
- Beverages - Non-Alcoholic
- Beverages - Wineries & Distilleries
- Confectioners
- Farm Products
- Packaged Foods
- Tobacco

Hitech Electronics
- Communication Equipment
- Computer Hardware
- Consumer Electronics
- Electronic Components
- Scientific & Technical Instruments
- Solar

Hitech Semiconductors
- Semiconductor Equipment & Materials
- Semiconductors

Industrials
- Building Products & Equipment
- Business Equipment & Supplies
- Conglomerates
- Electrical Equipment & Parts
- Farm & Heavy Construction Machinery
- Metal Fabrication
- Packaging & Containers
- Pollution & Treatment Controls
- Specialty Industrial Machinery
- Tools & Accessories
- Waste Management

Materials / Mining
- Agricultural Inputs
- Aluminum
- Building Materials
- Coking Coal
- Copper
- Gold
- Lumber & Wood Production
- Other Industrial Metals & Mining
- Other Precious Metals & Mining
- Paper & Paper Products
- Silver
- Steel
- Textile Manufacturing

Medical Equipment
- Diagnostics & Research
- Medical Devices
- Medical Instruments & Supplies

Oil and Gas
- Oil & Gas Drilling
- Oil & Gas E&P
- Oil & Gas Equipment & Services
- Oil & Gas Integrated
- Oil & Gas Midstream
- Oil & Gas Refining & Marketing
- Thermal Coal
- Uranium

Pharmaceuticals
- Biotechnology
- Drug Manufacturers - General
- Drug Manufacturers - Specialty & Generic

Restaurants
- Restaurants

Retail
- Apparel Retail
- Auto & Truck Dealerships
- Department Stores
- Discount Stores
- Grocery Stores
- Home Improvement Retail
- Internet Retail
- Pharmaceutical Retailers
- Specialty Retail

Telecommunications
- Telecom Services

Transportation
- Airlines
- Integrated Freight & Logistics
- Marine Shipping
- Railroads
- Trucking

Wholesale Distribution
- Electronics & Computer Distribution
- Food Distribution
- Industrial Distribution
- Medical Distribution

Appendix
Notes and Definitions (1 of 4)

1	**Primary data sources** for the analysis are YCharts and Worldlocity research using data publicly available through the Internet.
2	**Company data filtering** - Companies included in this analysis are filtered based on available financial, operational, and market cap data. Generally, companies must have revenue, COGS, and market cap data to be included in the analysis.
3	**Industry classification** - companies are classified to industries using 1) Morningstar industry classifications; 2) Global Industry Classification System (GICS); and 3) Manual adjustments in those cases where either Morningstar is incorrect, GICS is incorrect, or both are incorrect. Both Morningstar and GICS are incorrect in a small percentage of cases. An attempt has been made to correct all of these, but there are probably still a small number of companies that may misclassified.
4	**TTM** = trailing twelve months = last four fiscal quarters.
5	**Weighted Average Cost of Capital (WACC)** = represents a company's average cost of raising funds from both debt and equity, weighted by their portion of the firm's capital structure. It's essentially the company's hurdle rate for new investments. WACC for each industry and each year is as reported by Aswath Damodaran, NYU Stern Business School. This is reported annually in January using data from the previous year. For a given year, this analysis uses the values reported in January for that year and uses the data set for US companies, only. Global WACC numbers for each industry will be slightly higher.
6	**Tax Rates** used in any financial calculations (for example NOPAT) are global industry averages for the money-making companies in each industry, as reported each year by Aswath Damodaran, NYU Stern Business School. This is reported annually in January using data from the previous year. For a given year, this analysis uses the values reported in January for that year.
7	**Gross Profit** = Revenue minus Cost of Goods Sold (COGS)
8	**Gross Margin** = Gross profit divided by Revenue
9	**Operating Income** = Gross profit minus operating costs, which typically include sales and marketing, general and administrative, and research and development costs.
10	**EBIT** = earnings before interest and taxes
11	**EBITDA** = earnings before interest, taxes, and amortization. EBITDA is calculated as operating income plus depreciation and amortization.
12	**Adjusted EBITDA** = EBITDA plus stock compensation.
13	**Net Operating Profit After Taxes (NOPAT)** = Operating Income times (1 minus Tax Rate). NOPAT is used in some ROI equations to focus on the operating aspects of a company, while also recognizing the reality of taxes.
14	**Free Cash Flow** = operating cash flow minus CAPEX.
15	**Cash** = cash, cash equivalents, and marketable securities.
16	**Non-Operating Cash and Cash Equivalents** is calculated as Cash and Cash Equivalents minus 3.5% times Revenue. The assumption here is that 3.5% of revenue is the amount of cash needed to fund opeations. The amount of operating cash for each company and industry may be different, but this rule of thumb is used for scalability across a large number of companies. In those cases where the Non-Operating Cash and Cash Equivalents results in a negative number, it is set to zero.

Appendix
Notes and Definitions (2 of 4)

17	**Total Debt** = short-term debt, the current portion of long-term debt, long-term debt, borrowings under credit facility, capital lease obligations, convertible notes, and deferred rent.
18	**Operating Assets** = total receivables + inventories + deferred tax assets + Net PP&E + goodwill and intangibles. Operating assets are the assets needed to drive operations in a manufacturing, distribution, retail, transportation or other company engaged in supply chains. Deferred Tax Assets are considered part of operating assets since they were created by opeating activities and represent a future tax savings. Receivables are included because they are a direct result of operations. Goodwill and Intangibles are included because they are presumably used in the producing, selling, and distributing goods and services.
19	**Capital Employed** = Total Assets minus Current Liabilities, or alternatively, Shareholders Equity plus Non-Current Liabilities. This is intended to capture all the long-term capital invested in the business.
20	**Invested Capital** = Total Debt + Total Equity minus Non-Operating Cash and Cash Equivalents. In those cases where equity is negative, equity is set to zero. Invested capital is intended to represent the amount of capital invested in a buinsess by shareholders and debtholders. Non-operating cash is subtracted in order to arrive at the net debt invested in the business.
21	**Return on Assets (ROA)** = Net Income divided by Total Assets.
22	**Return on Invested Capital (ROIC)** = NOPAT (defined above) divided by Invested Capital (defined above). If a company's Invested Capital is negative, ROIC is meaningless and not calculated for that company.
23	**Return on Capital Employed (ROCE)** = EBIT (defined above) dividied by capital employed (defined above). If a company's Capital Employed is negative, ROCE is meaningless and not calculated for that company.
24	**Economic Profit (EP)** = Net Operating Profit after Taxes (NOPAT) minus Weighted Average Cost of Capital (WACC) times Invested Capital. WAAC, NOPAT, and invested Capital are defined above. EP is also known as Economic Value Added (EVA). EVA is a trademark of Stern Value Management. A company is deemed to be creating value if its EP is greater than zero. The idea is that the cost of capital represents a hurdle rate for investors and debtholders and must be exceeded by NOPAT in order for value to be created.
25	**Return on Operating Assets (ROOA)** = NOPAT / Operating Assets. ROOA is a measure of operational efficiency and can be used to compare the supply chain operational efficiency of different companies.
26	**Return on Fixed Assets (ROFA)** = Operating Profit divided by Property, Plant, and Equipment (PP&E, net of depreciation). ROFA is sometimes used as supply chain metric to show how much operating profit is being generated by a company's fixed assets.
27	**Return on Physical Assets (ROPA)** = Operating Profit divided by (PP&E (net) plus Inventory). ROPA is sometimes used as a supply chain metric to show how much operating profit is being generated by a company's physical assets.
28	**Inventory Turns** = COGS (end of period) divided by Inventory (end of period). A more precise definition is the average COGS over a period divided by average Inventory over that period. In this analysis, the end of period (typically the end of the most recent fiscal year, or trailing twelve months (TTM)) is used for ease of calculation and scalability.

Appendix
Notes and Definitions (3 of 4)

29	**Gross Margin ROI = GMROI** = Gross Profit divided by Inventory. GMROI is typically used in the retail industry to understand how much gross profit is generated by a certain amount of inventory. Diferent product lines and products will have different GMROI values. In this analysis we use Gross Profit and Inventory at the end of a reporting period. A more precise calculation would use the average inventory over the reporting period.
30	**Turn and Earn** = Inventory Turnover times Gross Margin %. Turn and Earn is a metric that shows the tradeoff between inventory turns and gross margin. High gross margin targets with low inventory turns can result in the same results as low gross margin targets with high inventory turns. In the automotive retail business, "Earn" has a double meaning - it also means that the faster you turn inventory, the more product allocation you will "earn" from the manufacturer.
31	**Cash-to-Cash (C2C)** = Days in Receivables plus Days in Inventory minus Days in Payables. This is also called the Cash Convesion Cycle (CCC).
32	**Capital Expenditures (CAPEX)** = gross CAPEX, in other words it does not net out the sale of assets.
33	**Enterprise Value (EV)** = Market Capitalization plus Total Debt minus Cash.
34	**Mergers and Acquisitions** - In the case of companies formed from mergers, the oldest company is used to designate the resultant company founding year.
35	**Depreciation** is the systematic allocation of a fixed asset over its useful lifetime. The useful life of production and other machinery for accounting purposes is typically somewhere between 7 and 20 years. Enterprise software, can be a significant part of the fixed asset base of companies, typically has a useful life for depreciation purposes of 3-10 years. This does not apply to Software as a Service (SaaS) or subscription software, which are treated as an expense, not an asset that has to be depreciated.
36	**Amortization** is the expensing of the cost of an intangible asset over time. Intangible assets include goodwill, intellectual property, patents, and software. Amortization is a non-cash charge that shows up in various elements of a company's income statement. The costs of obtaining a contract - typically sales commissions - are also amortized under accounting standards ASC 606 and IFRS 15.
37	**Allocation of Depreciation and Amortization** - Most companies allocate depreciation and amortization costs to individual cost buckets, including COGS, SG&A, and R&D. This is done based on where the depreciated or amortized asset is used. For example, depreciation of manufacturing equipment, which is used in production, would be allocated to COGS, while the amortization of intellectual property used in sales and marketing would be allocated to that cost bucket. Some subset of companies explicitly show depreciation and amortization costs on the income statement after the other cost buckets. No attempt was made to reallocate these costs for this subset of companies. This has the effect of understating COGS, SG&A, and R&D for those companies.
38	**3-Year Compound Annual Growth Rate (CAGR)** is based on the past four years of annual financial data.
39	**Market Capitalization** is based on the stock prices as of the date on the cover of this report for each company. Market Cap to Revenue Ratios or Enterprise Value to Revenue ratios are market capitalization divided by trailing twelve months (TTM) revenue through the most recently reported fiscal quarter as of the date on the cover of this report.

Appendix
Notes and Definitions (4 of 4)

40	**Mergers and Acquisitions** - Individual company YOY numbers may be distorted due to mergers and acquisitions. No attempt has been made to normalize for mergers, acquisitions, and divestitures.
41	**All Financial Data** is based on what has been reported as of the date on the cover of this report. Data is captured for Trailing Twelve Months (last four quarters) and for the last fiscal year that occurred on or before the calendar year end (12/31) for each year.
42	**Historical data** is the past eleven fiscal years for all companies. The number of companies grows for each year in the historical analysis, as more companies became public across the decade.
43	**Aggregate Inventory Turns** is calculated as follows: sum of all COGS for all companies in an industry divided by sum of all inventories for all companies in an industry at the end of the calendar year or for the most recent trailing twelve months (TTM). The aggregate COGS number that is used for aggregate inventory calculations is the sum of COGS for those companies that have non-zero inventory. This has been found to be more accurate due to missing inventory data for certain companies in out years (several years beyond the present).
44	**Research and Development** - A good percentage of companies in various industries do not report research and development separately on their income statements. In these companies, R&D is included in COGS. This has the effect of overstating COGS for those companies, which by extension understates their gross margins and overstates their inventory turns. Aerospace & Defense, Automotive, Industrials, and Hitech Electronics are the industries in which a significant number of companies do not report R&D separately, and in which R&D represents a significant percentage of revenue. R&D as a percentage of revenue in these industries can average 4%-8% of revenue. This can result in understating aggregate and average gross margins for an industry and overstating aggregate and average inventory turns. No attempt has been made to normalize for this effect (it will be studied in later reports). Other industries that have significant R&D such as Hitech Semiconductors, Pharmaceuticals, and Medical Equipment have this problem, but only for a small percentage of companies that do not report R&D.

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